

THE UNIVERSAL EXPOSITION OF 1904

Volume I

David Rowland Francis





PRESIDENT FRANCIS OPENING THE EXPOSITION , APRIL 30 , 1904

THE
UNIVERSAL EXPOSITION
OF
1904

BY
DAVID R. FRANCIS

And in the name of the Government and of the People of the United States, I do hereby invite all the Nations of the Earth to take part in the Commemoration of the Purchase of the Louisiana Territory, an event of great interest to the United States and of abiding effect on their development, by appointing representatives and sending such exhibits to the Louisiana Purchase Exposition as will most fitly and fully illustrate their resources, their industries and their progress in civilization. - Proclamation of President William McKinley.

ST. LOUIS
LOUISIANA PURCHASE EXPOSITION COMPANY

1913

TO THE DIRECTORS
OF THE
LOUISIANA PURCHASE EXPOSITION COMPANY

WHOSE INTELLIGENT SUPPORT AND STEADFAST ENCOURAGEMENT
THROUGH THE YEARS OF PREPARATION AND MONTHS
OF MAINTENANCE MADE POSSIBLE THE
SUCCESS OF THE EXPOSITION.

A FORWARD IN RETROSPECT

A great thinker has said,

*“The sentiment from which it springs
Determines the dignity of any deed.”*

The Universal exhibit of 1904 was conceived in a sense of obligation on the part of the people of the Louisiana Purchase Territory to give expression of their gratitude for the innumerable blessings that have flowed from a century of membership in the American Union, to manifest their appreciation of the manifold of benefits of living in a land, the climate and soil and resources of which are unsurpassed, and of having their lots cast in an age when liberty and enlightenment are established on foundations broad and deep, and are the heritage of all who worthily strive. To rise to the full measure of such a sentimental required an undertaking of comprehensive proportions and the participation of all races and of every clime.

Six years of preparation preceded the opening of the gates. The first year was devoted to arousing the interest of the people of St. Louis and to securing the cooperation of the states and territories formed from the Purchase. The two years following were spent in enlisting the sympathy of other sections of the United States and in gaining the recognition and assistance of the general government. Three years were required for the physical work. During them the campaign of preparation was vigorously pushed in every part of the globe. The movement enlarged in scope from day to day, and took on more definite shape from year to year. Discouragements were frequent enough, but were only the words of cheer and commendation, the patient consideration given to what was often looked upon as misdirected enthusiasm, but which was persisted in and almost invariable converted indifference or skepticism into healthful and active interest.

The magnitude of the enterprise was never lost sight of by its promoters. The mammoth proportions, constantly increasing, never for a moment shook the confidence, weakened the energies, or diverted from their well defined purposes those who had been entrusted with the responsibility and the work.

The sincere and helpful interest of the federal government, the unanimous cooperation of the states and territories and possessions of the United States, the participation of almost every country on the globe, are recorded evidences of the wisdom and thoroughness of the work of exploitation and establish unquestionably the universal character of the Exposition.

The magnificent structures whose graceful lines and imposing fronts have had no peer in architecture or design; the entrancing picture of lagoons and cascades; the delightful vistas at every turn; the inimitable adaptation of the beauties of nature to the achievements of art, clearly showed the skill and judgment exercised in preparing receptacles for the products of the world.

The exhibits of every country and of every people, classified in a manner unequalled for clear and competitive comparison, and by a system and in an

order that recorded the development of man and his accomplishments, testified to the advancement of civilization and showed in their arrangement the result of thoughtful experience. They were lessons beyond comparison for the edification of an who desired to learn.

The consummation rose to the full measure of the ambitious plan outlined at the inception of the enterprise. The lofty sentiment that inspired the celebration found a realizing embodiment in the picture. The exhibition of man's handiwork portrayed his progress and development. The assembling of products of all ages, brought together in friendly rivalry by nations and races differing in faith and in habits and ideals, formed a correct composite of man's achievements, of the thought of the twentieth century. The Universal Exposition of 1904 was more than an exhibition of products or even of processes. It was more than a congregating of the grades of civilization, as represented by all races from the primitive to the cultured. It was even more than a symposium of the thought of the student and of the moralist. It was all of these combined, and the whole formed a distinct entity whose impress on the present and influence on the future must be deep and lasting.

By bringing together hitherto remote and unacquainted peoples, and thereby promoting mutual respect, it was an important step towards establishing that universal peace for which all right-minded people are striving.

The Exposition of 1904 holds a place in history more conspicuous than its projectors anticipated. For the opening decade of this century, it stands a marker of the accomplishments and progress of man. So thoroughly did it represent the world's civilization that if all man's other works were by some unspeakable catastrophe blotted out the records established at this Exposition by the assembled nations would afford the necessary standards for the rebuilding of our entire civilization.

A handwritten signature in black ink, reading "David C. Francis". The script is fluid and cursive, with a prominent initial "D" and a long, sweeping underline.

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INCEPTION AND DEVELOPMENT

January 1899-May 1901

CHAPTER I

LOUISIANA PURCHASE CONVENTION

Representative Delegates—Celebration of the Centennial—Unanimity on Manner and Place—The Convention's Conclusions—Local Committee of Two Hundred—Initiative by Missouri Historical Society—Appeal of the Businessmen's League

ON the 10th of January 1899, there assembled in St. Louis ninety delegates representing the states and territories of the Louisiana Purchase. They convened in response to the call of the governor of Missouri, for the purpose of considering the commemoration of the acquisition of the Louisiana Territory when its one hundredth anniversary should come. The delegates were appointed by their respective governors and were representative men of the states and territories. They were earnest, public-spirited, patriotic, and fully cognizant of the sentiment of the commonwealths and communities for which they stood. They realized what the purchase of the Louisiana Territory by Monroe and Livingston, under the direction of Jefferson, meant for the United States of one hundred years ago; what an important, indispensable part that addition to our domain played in the upholding of our institutions and the establishment of free government. They fully endorsed the estimate in which Jefferson held the Louisiana Purchase and that was as second in its importance and consequence only to the Declaration of independence.

They felt that the centennial of such an event should be celebrated in a manner befitting the dignity and magnitude of the occurrence, and that this generation would be derelict in its duties to its forefathers and to the founders of the republic and untrue to itself if it failed to show its appreciation of the blessings it enjoys as the result of the Purchase. In their wisdom these delegates decided that nothing short of an international exposition would comport with the grand achievement they resolved to celebrate. They agreed that the proper location for such an exposition was in the largest, wealthiest, and most accessible city in the Purchase—St. Louis. As chairman of the Executive Committee of the Convention, I was directed to say to the people of St. Louis that if they would raise for such an exposition not less than \$10,000,000, the people of the Louisiana Purchase states and territories would pledge their moral and material support to the enterprise and would lend their potential aid towards securing for the Exposition a loan of \$5,000,000 from the federal government.

In summing up conclusions, the delegates, without a dissenting voice, declared:

We believe that this object can be best accomplished by an exposition, international in its character, where the products of the labor, skill, genius, industry and enterprise of our country are brought into close comparison with those of all other countries; where

the peoples of the earth can have an opportunity to behold and study the mighty impress which the influence of liberty makes upon the progress of man; and in this great contest, where the world is the field, this wonderful valley, extending from the semi-tropical sea on the South to the semi-frozen regions of the North, will gladly submit its progress and achievements for the first century of its growth, in friendly competition with the results of many centuries in the older world.

The convention recommended that Congress be asked to participate through a suitable appropriation.

A roll call of states and territories for an opinion on the most appropriate location for the proposed exposition showed sixty-nine votes for St. Louis and eight for New Orleans.

The Missouri delegation asked to be excused and did not vote. On motion of a delegate from Louisiana, Mr. Calhoun, the selection of St. Louis was made unanimous.

The convention then proceeded to organize the executive committee, composed of three representatives from each state and territory within the Purchase.

The people of St. Louis acted promptly upon the decision of the Louisiana Purchase Convention. A Committee of Two Hundred was formed, with Pierre Chouteau as chairman, with David R. Francis as head of the Executive Committee, and with William H. Thompson as chairman of the Finance Committee. Definite, systematic, and energetic work in promoting the exposition project was immediately begun.

One of the first acts of the Committee of Two Hundred was to draft a bill providing for an appropriation of \$5,000,000 by Congress for the Exposition. This bill was forwarded to the Missouri delegation at Washington in January 1899, for introduction at the appropriate time.

it was understood that the proposed appropriation of \$5,000,000 by the national government was recommended by the Louisiana Purchase Convention only after a pledge had been given that St. Louis would raise \$10,000,000 in support of the enterprise on its own account and in advance. The success of all future negotiations therefore depended upon raising this great amount of money. Effective steps were immediately taken in this direction.

it was decided to endeavor to secure half of the amount required, \$5,000,000, by popular subscriptions, the other half by appropriation of the municipality.

The work of securing popular subscriptions of \$5,000,000 was serious and colossal, and received first attention.

In order to render possible the appropriation of \$5,000,000 by the municipality of St. Louis a charter amendment had to be voted by its citizens. Attention to this important procedure was also given. The labor and difficulties in securing \$5,000,000 from the municipality seem now to have been sufficient to discourage the promoters. First, a constitutional amendment was required to permit the people of St. Louis to vote on a proposition to amend their charter and increase their debt and coupled therewith was a proposition for the appropriation of one million dollars by the State of Missouri to defray the expense of a state exhibit. The subject was presented to the state legislature and the plan adopted during the session of 1899, but could not, under the provisions of the constitution, be submitted to the people except at a general election. The next general election was in November 1900 - nearly two years later.

While the Louisiana Purchase Convention formally inaugurated the Exposition movement by the fourteen states and territories created from the Province

of Louisiana, much local consideration and agitation had preceded this gathering representative of the entire Purchase.

While governor of Missouri, Mr. Francis was chairman of a delegation which went from this state to the national capital in 1890 to secure for St. Louis the proposed exposition in celebration of the 400th anniversary of the discovery of America; when the movement failed, the delegation announced that an exposition would be planned and held in St. Louis to commemorate the centennial anniversary of the Louisiana Purchase.

In January 1896, in speaking at a meeting of the Business Men's League of St. Louis, Mr. Francis said:

I do not think it is any too early to begin laying plans for a great celebration. The Louisiana Purchase was the most important feature of the history of this state. An international exposition would be just the thing for a celebration. Congress should be asked to make an appropriation for a government exhibit as was done at the World's Fair, and to assist us by official recognition. St. Louis is the most appropriate city for such a celebration as it is the gateway from the East to all the territory embodied in the original purchase. I think we could make an exposition on as large a scale as the World's Fair and have exhibits from all the countries on the globe.

The newspapers of the city, during the years following the World's Columbian Exposition, discussed the form of a celebration for the Centennial of the Purchase. In January 1898, the advisory board of the Missouri Historical Society, taking up the suggestion of Pierre Chouteau, appointed a special committee of the Society on the Centennial. In February, the following month, notice of what St. Louis had in mind was given to the nation by Representative Bartholdt through the introduction in Congress of a bill for an international exposition at St. Louis in 1903. This followed by a few days the adoption of resolutions by the Central Trades and Labor Union of St. Louis favoring a world's fair.

In April 1898, the Business Men's League appointed a committee to confer with the special committee of the Historical Society. During that and the following month these committees discussed various ways and means of celebrating the Centennial, a world's fair not being preferred by all. About the end of May there was issued to the following organizations an invitation to appoint representatives to discuss "the desirability of a celebration in 1903 and what form it should take:"

Academy of Science	St. Louis Real Estate Exchange
Bar Association of St. Louis	Master Builders' Association
Business Men's League	Mercantile Club. Merchant's Exchange
Commercial Club	National Building Trades Council
Engineers' Club	Noonday Club
Exposition and Music Hall Association	Round Table
Implement & Vehicle Board of Trade	St. Louis Board of Fire Underwriters
Latin American Club	St. Louis Clearing House Association
St. Louis Chapter American Institute of Architects	St. Louis Furniture Board of Trade
St. Louis Club	St. Louis Furniture Board of Trade
St. Louis Cotton Exchange	Union Club
	University Club
St. Louis Manufacturers' Association	

The conference of these representatives was held at the rooms of the Missouri Historical Society, June 22. A resolution was adopted providing for a committee of fifty, which committee was selected by a nominating committee of fifteen. The Committee of Fifty on Preliminary Organization was announced July 12, 1898. This committee held several meetings during the fall months. A subcommittee on design and form of celebration met weekly, canvassing public interest and sentiment on the subject. The members were: Pierre Chouteau, chairman; W. S. Eames, D. R. Francis, William Hyde, Halsey C. Ives, Frederick W. Lehmann, Julius Pitzman, William Taussig, John H. Terry, Sylvester Waterhouse. The sub-committee reported November 28th to the Committee of Fifty in favor of some form of exposition and recommended "a convention of representative men from the states and territories of the Louisiana Purchase to determine the time, place and manner of commemorating the acquisition of the Territory of Louisiana." Thus, came about the Louisiana Purchase Convention and subsequent organization.

CHAPTER II

PUBLIC RECOGNITION

Movement Launched at Washington—Louisiana Purchase Senators and Representatives Organize—Missouri Legislators Listen—Amendment to the State Constitution—State Appropriation of \$1,000,000—Municipal Subscription of \$5,000,000 Authorized—Popular Sentiment Overwhelmingly Favorable

IN the month following the convention of delegates representing the Louisiana Purchase states and territories at St. Louis, thirty members of the executive committee named by the convention, representing all parts of the Purchase, visited Washington. The committeemen canvassed the congressional delegations from their respective states. They found the responses to the suggestion of a world's fair prompt and emphatic. Following the canvass, there was given a dinner, the hosts of which were the executive committee of the Louisiana Purchase Convention. The guests were members of the cabinet, senators, representatives and delegates of Congress and justices of the United States Supreme Court. Invitations were limited strictly to those from Louisiana Purchase states and territories. The cabinet was represented by Secretaries Hitchcock and Wilson. Congress was represented by nearly every senator and representative and delegate within the Purchase. The Supreme Court was represented by Justices Brewer and White.

The banquet assumed a most practical aspect. A series of speeches was made endorsing the decision of the convention and pledging personal effort on the part of the guests to carry out the recommendations. These addresses were characterized by marked enthusiasm.

In the course of his introductory remarks, the chairman of the executive committee said:

Such an exposition as we are planning will be the scene of competition of the highest mechanism of the world, and the theatre for the display of the best thought of the age. On behalf of St. Louis, I am authorized to say—and in this statement I am sustained by substantially all of her progressive, public-spirited merchants, capitalists and laboring men—the men who have made that city what it is—and twenty-five or more of them are seated at this board—I am authorized to say that the city of St. Louis pledges her people to raise at least \$10,000,000 toward preparing for such an international exposition as will fitly commemorate the Louisiana Purchase, provided the federal government will grant its recognition of the Exposition, and will evidence its good will and support.

The addresses which followed dwelt upon the magnitude of development within the Purchase limits and upon the importance of the Purchase to the whole country. There was not an inharmonious note in that series of addresses, continuing far into the night.

The executive committee and the St. Louis delegation returned to their homes to take up the preliminary work. Senators and representatives and delegates who had pledged their co-operation formed an organization to encourage sentiment on the subject in Congress.

These gratifying results were not accomplished without considerable effort. As the next step following the successful launching of the movement in Washington it became necessary to inform the Missouri Legislature and to plan a legislative campaign in the state. Initial thereto the members of the Missouri Legislature were invited to come to St. Louis as the guests of the Committee of Two Hundred. On the 11th of March 1899, a banquet was given the visitors at the Mercantile Club. Nearly every member of the legislative body was present. The hosts included not only the Committee of Two Hundred, but citizens of St. Louis prominent in every walk of life.

Reviewing what had been accomplished up to that time, the chairman of the executive committee, who was the presiding officer of the gathering, said:

The eyes of the country are directed toward us. Our promises made at the national capital two weeks ago tonight startled the legislative and executive branches of the federal government and arrested the attention of the entire country. Representative men from the different states of the Purchase, men of thought and influence who have made their imprint on the laws of the land and on the policies of political parties, told a distinguished audience how the purchase of Jefferson was fraught with consequences of great import not only to our institutions and our whole people, but to humanity itself. In well-chosen words and with touching pathos did those experienced legislators and leaders of opinion portray the wisdom and the significance of Jefferson's inimitable expansion. They dwelt with unanimity and with emphasis on the advisability of fitly commemorating so great an event and concluded with one voice that its 100th anniversary should be marked by such an exposition as the world had never seen surpassed or equaled. The delegation authorized to speak for St. Louis on that occasion pledged the city to do its best, and you do not need to be assured that St. Louis' best is second to none. It stated that delegation to the national capital-stated in measured and deliberate terms that it spoke by instruction as well as by authority for the metropolis of the Louisiana Purchase. That delegation said that the people of St. Louis attempted to realize the value of the Louisiana Purchase to the welfare of this country and was proud to acknowledge the city itself was but a product of the resources of that territory, developed by the energetic, courageous pioneers and their descendants who had populated it. The delegation said that the people of St. Louis were desirous to do their full share toward celebrating this great centennial and felt highly honored that it had been selected as the scene of such a celebration; that such selection was a great compliment to the most populous, the wealthiest, the first state of the Purchase - Missouri - whose resources are unparalleled and unapproachable. That delegation was composed of Missourians who are proud of their state, who believe that there is more diversified and undeveloped wealth within her borders than in any equal area on the globe. They are active men of affairs-men who have extended the fame and commerce of Missouri beyond the limits of the Louisiana territory and beyond the confines of the United States. Among them was a Missouri member of the President's cabinet, a Missouri chief of the coast and geodetic survey, the two distinguished Missouri senators, the fifteen influential Missouri representatives and the two eminent members of the Missouri Legislature who are chairmen of the senate and house committees on the Louisiana Purchase Centennial celebration. These are representative men surely-men who appreciated what it meant to Missouri to

be the scene of the display of the best the human race has accomplished from the dawn of civilization or the beginning of history. They knew that for the five years of preparation for that grand exposition the eyes of the world would be turned toward Missouri, and that during the six months of the life of the exposition Missouri will be the theater where will be presented the acts in the drama of civilization that will illustrate the industrial, the intellectual and the social advancement of the Christian era. They knew that for Missouri to be the host of such an assemblage of the world's elect as will then congregate here will be an honor never to be forgotten. They - your representatives - were fired with an ambition and a pride (which i am sure you approve) to make the occasion worthy of so distinguished a company - to make it a credit to the grand commonwealth of which we are proud to be sons - to make it worthy of the state that produced a Benton and a Blair and many other statesmen and patriots who performed such important parts in shaping the destinies of the republic.

That delegation was authorized to speak for St. Louis, and it did speak in no uncertain sound. It was sorely tempted to speak for Missouri, because, although not authoritatively empowered to do so, it felt confident that the loyal, progressive people of the state would endorse and fulfill any reasonable pledges made for them toward the consummation of so appropriate an achievement.

As representing the Louisiana Purchase Convention, held in this city on January 10th last, composed of delegates from twelve states and two territories-which convention has decided to celebrate the 100th anniversary by an unexcelled international exposition the delegation to Washington asked a loan of \$6,000,000 from the federal government to aid in the preparation for such a celebration. As representing the city of St. Louis, the delegation said to the Congress that the people of that city pledged themselves to raise \$10,000,000 toward such a celebration, and that the federal government could make its loan conditional upon \$10,000,000 being provided by the city - so that the money need not be advanced by the general government if St. Louis did not provide \$10,000,000. The proposition met with approval and applause. Its fairness was commended, its liberality complimented. Representatives and senators from the Purchase uttered enthusiastic words of encouragement and committed themselves and their constituency to support of the measure. An influential member from a prosperous state in the Purchase said that if Congress would not advance \$6,000,000 for such an object on the terms named his state would. It was at that stage of the proceedings we were almost moved to speak for grand old Missouri. Ours was the first in wealth, the first in population, the first in resources-developed and undeveloped-of all the great states in the Louisiana territory. Missouri was the host of that banquet. Is not Missouri as able to advance to any cause as is Kansas? Is there not more reason why Missouri should aid this fair than any other state in the Purchase should do so?

If we secure \$5,000,000 from the federal government, and, in my judgment, we will - we shall then have \$15,000,000. I do not know that we shall require more, but whether we do or not, the people of Missouri would feel offended if not given an opportunity to aid in this great undertaking.

We are all interested alike in the progress and welfare of this commonwealth and equally jealous of her fair fame. Such an exposition as we have planned will inure to the material benefit of the state at large and the success of the celebration will reflect credit on every Missourian.

We have not invited you to be our guests upon this occasion for the purpose of embarrassing you by a request to do anything of which your own good judgment does not approve.

Missouri at the World's Fair of 1893 took the premium for the best general and most

varied exhibit; at Omaha she took more premiums than any other state, but at an exposition held within her own borders the exhibit of her mineral and agricultural products will be beyond compare. In my opinion, the people of this state will desire a proprietary interest in the world-renowned exposition. It will cost them little, and that little will be cheerfully granted. The significance of the aid-the good-will expressed thereby- will be of more value to us than aid itself. We, who have been active in this movement, and have devoted time and effort to its promotion, have no more no less obligation to work in this cause than has every patriotic Missourian.

Addresses followed by the mayor of the city of St. Louis, by Lieutenant Governor Bolte for the governor, by senators and by representatives.

Practical results speedily followed. In April an act to incorporate the Louisiana Purchase Exposition Company under such provisions as to enable it to hold the World's Fair was passed by the legislature.

By an almost unanimous vote the legislature decided to submit to the people of the State of Missouri the necessary amendment to the constitution of the state authorizing a state appropriation of \$1,000,000 for the World's Fair; also an amendment to enable the people of St. Louis to vote a municipal subscription of \$5,000,000. Both of these amendments were ratified by over whelming majorities at the ensuing state election.

CHAPTER III

COMMITTEE OF TWO HUNDRED

**The Business Men's League—"New Occasions Bring New Duties"
The Finances—How the City Was Canvassed—Subscriptions of
\$4,244,670 at One Meeting—Conditions of National Support Ful-
filled—President McKinley Endorses**

THE formal appeal to the people of St. Louis to take the step vital to success and dependent on them was uttered at a mass meeting held in Music Hall, April 22, 1899. But this meeting was not called until the Committee of Two Hundred had been organized and much preliminary work had been done. One of the preliminaries was the preparation of public sentiment. In this direction the annual meeting of the Business Men's League held January 18, 1899, played no inconspicuous part. It was largely attended by representative business men. It followed a highly successful year of effort by the league to advance the interests of St. Louis in various ways. By arrangement with the officers of the league, who were heartily committed to the World's Fair, the meeting was made the occasion for presentation of the work the people of St. Louis must do.

The dinner and annual meeting of the league followed the Louisiana Purchase Convention by about ten days. Having disposed of the annual business and reports, having elected officers for the ensuing year, the league devoted the remainder of the evening to the exposition movement. Robert H. Kern spoke first, paving the way for an address by the chairman of the executive committee of the Committee of Two Hundred, who said:

There are so many phases of this world's fair question, that it is difficult to even mention them all in the limit of an after-dinner talk. In the first place, gentlemen, let me remind you that this movement was not originated by a desire on the part of any one to hold a fair in St. Louis or elsewhere, but solely for the purpose of meeting the expectation of this and of every enlightened country, and of discharging our duty to our forefathers and to posterity by celebrating, in a fitting manner, the 100th anniversary of the greatest event in our history since the Declaration of independence and the formation of our government—the Purchase of the Louisiana territory.

Some of the reasons why that inestimable acquisition should be commemorated, I endeavored to give to the Louisiana Purchase Convention held in this city last week, and it is not necessary to repeat them here. It may not be uninteresting, however, to relate here a Spanish prophecy made over a hundred years ago by Count Aranda, who represented Spain at the peace negotiations held at Paris in 1782. The United States was represented by John Jay, John Adams, and Benjamin Franklin, who were contending for all the territory from the Mississippi to the Atlantic and from Florida to the lakes, while the commissioners of England, France and Spain argued for the extension of the southern boundary of Canada to the Ohio River, and for the formation of that section South

of the Ohio, west of the Alleghenies and east of the Mississippi into an Indian territory to be placed under the protection of Spain and the United States. American diplomacy and Yankee tenacity carried the day.

Our domain was extended to the Mississippi and to the lakes and our independence acknowledged. The area seemed, and was, enormous. Aranda wrote to his King after the treaty was agreed to: "This federal republic is born a pygmy. A day will come when it will be a giant, even a colossal, formidable one to these countries. Liberty of conscience, the facility for establishing a new population on immense lands as well as the advantages of a new government, will draw thither farmers and artisans from all nations. In a few years we shall watch with grief the tyrannical existence of this same colossus." Prophetic Spaniard! Far-seeing Aranda!

Just twenty years after that remarkable prediction Thomas Jefferson violated yea, outraged all the tenets of a lifetime concerning the province of government by the people and the limitations of our constitution, by purchasing from Napoleon the Louisiana territory, and thereby added twice as much area as the peace of 1783 gave us.

There were men then, and good men, who thought and said that this country not only did not need such an extension of territory, but that its government would entail cares and expenses and prove an element of weakness rather than strength. Look at the result and imagine, if you can, what this country would have been without the Louisiana Purchase. There are men in St. Louis today, and good men they are, who claim that this city is not equal to a world's fair. Who of us can tell what five years will bring forth? Electricity is not only supplementing steam as a motive power but is likely to give way to compressed air as a cheaper and more potent agent. I remember the celebrated Nicola Tesla said to me a few years ago that the time will come when the electricity which permeates all air will be harnessed and utilized, and i believe it. Who will dare affirm that science will not accomplish that feat within the next five years?

It has made wonderful advances since 1893, when the world stood aghast at the unparalleled display at Chicago. Why, my friends, America needs an international exposition every ten years to exhibit the progress she has made even if there were no memorable events for her to celebrate. Furthermore, to say nothing now of their educational features, such gatherings serve as peace congresses, by bringing into closer association different races and antagonistic nationalities. Every international exposition is a step toward the disarmament of the world.

What St. Louisan will say the next world's fair in America should not be held in this city? How can it be done, do you ask? By the united effort of the men around this table, i reply. We had over \$4,000,000 subscribed here in 1890 toward the great World's Fair, which the entire country demanded should be held to mark the 400th anniversary of the discovery of America. What was the St. Louis of 1890 compared with the St. Louis of 1899? We have thirty per cent more people than we had then, and the assessed value of our taxable property has almost doubled. Our railroad facilities have increased, our tributary territory has been enlarged by the opening of Oklahoma to settlement, and the rapid immigration to that productive region has contributed no little to the large growth of the city's trade. The fertile fields and the rich mineral deposits of the Indian Territory cannot for five years more withstand the steady march of the Anglo-Saxon pioneer. No section of our rich inheritance has developed more rapidly during the past five years than that prolific Southwest, of which St. Louis is the gateway; and the end is not yet. It should be easier to raise \$10,000,000 in this city for a world's fair at this time than it was to secure \$4,000,000 in 1890.

Much depends upon the action of this association. No body of men in St. Louis do more for its commerce, contribute more to accelerate its progress. I have no more

doubt as to your judgment and feeling on this subject than i have as to my own. In my opinion it is impossible to estimate the benefit to St. Louis of so grand an enterprise. The time allotted does not permit to recount the advantages that will flow from such an exposition. The distinction and glory of being the theater of the display of the scientific achievements of civilization for six months is worth \$6,000,000 to St. Louis. It will be the occasion for bringing together the people of every section of our country; of diminishing the prejudices between classes; of obliterating the bitterness engendered by political faiths. A new generation will have come on the stage since the World's Fair of '93. Millions of Americana will come to St. Louis who were not at Chicago, and the practical educational benefit to the West and South will continue to flow to St. Louis for at least a quarter of the new century upon which we are entering.

But i have already detained you too long. There is no escape, my friends, from this responsibility - stupendous as the undertaking may seem. If we decline this honor, if we shirk this duty, some other city in the Purchase will assume it, and the people of the country will applaud its courage and reward its efforts. To decline and shirk responsibilities is not characteristic of the enterprise and manhood that have cleared the forests, braved dangers, endured hardships, advanced the outposts of civilization and made the Louisiana territory what it is. St. Louis will not be derelict. She has never been. Let her now follow the injunction of Emerson. "Trust thyself; every heart vibrates to that iron string. Accept the place the Divine Providence has found for you, the society of your contemporaries, the connection of events." And accept the truism of Lowell-"New occasions bring new duties".

In no small degree the final success of the popular subscription was due to the well-considered plan adopted by the Committee on Finance, of which William H. Thompson was chairman. A sub-committee, headed by Breckinridge Jones as chairman, prepared the plan which, with minor changes, was adopted and carried through to the completion of a subscription of \$5,000,000. One feature of the plan was that no subscription should become binding until the full amount of \$5,000,000 should have been subscribed. The blank form used was as follows:

ST. LOUIS WORLD'S FAIR

CELEBRATING THE

LOUISIANA PURCHASE CENTENNIAL

Executive Committee,

Finance Committee,

D. R. Francis, Chairman,

Wm. H. Thompson, Chairman,

James Cox, Secretary.

SUBSCRIPTIONS TO STOCK.

Committee HEADQUARTERS, CARLETON Building

St. Louis, Mo.

We, the undersigned, for the purpose of organizing a corporation under the laws of the State of Missouri to celebrate the centennial anniversary of the Louisiana Purchase, such corporation to be known as "St. Louis World's Fair, celebrating the Louisiana Purchase Centennial," or by such other name as may be designated in the articles of association hereby agree, each in consideration of the other subscriptions hereto, and each separately for himself and not for any other, to pay the amounts below or upon copies hereof set opposite our respective names, to William H. Thompson, chairman, Committee on Finance, in the manner and upon the conditions following, to-wit:

First - Ten percent of the amount of said subscriptions shall be payable upon demand of said William H. Thompson, chairman, which sum may be called in such amounts as may be required by said Committee on Finance, and used in its discretion for preliminary expense incurred or to be incurred in the organization of such corporation and promoting the enterprise for which it is to be formed, and the remaining ninety per cent thereof shall be payable upon the call of the Board of Directors of the aforesaid corporation, when orga-

nized, in sums not to exceed twenty (20) per cent during any six months subsequent to the payment of the ten per cent call above mentioned.

Second - These subscriptions shall not become binding until the full amount of \$5,000,000 shall have been subscribed.

Name	No. of Shares (\$10 each)	Amount
Address		

The most important feature of the plan was that which provided for the schedule and divisions of various interests, business and otherwise, to secure a thorough and systematic canvass:

It was decided that the various classes of business be assigned to members of the Finance Committee and other members of the Committee of Two Hundred, and that each committeeman be required to see that an invitation shall be sent to each of the class, or classes, assigned to him, to meet at a given time and place with such committeeman, for the purpose of a conference as to the selection of a committee from those in his class or classes. It was decided that the Finance Committee shall meet daily to receive reports, and when sufficient progress has been made to warrant such action a grand mass meeting of all interests shall be held in Music Hall or other suitable place. At this mass meeting the heads of the various organizations of the city and the heads of other large institutions will act as vice-presidents, with seats on the stage. Addresses will be made, and subscriptions will be called for to the stock of the company, the minimum of such aggregate subscriptions to be \$5,000,000.

In April 1899, the scheme for soliciting subscriptions had so far progressed that it was deemed advisable to hold the proposed mass meeting at Music Hall. Not only were local conditions apparently ripe for this form of action, but it was deemed desirable to show Congress an earnest of the intention of St. Louis to do the part allotted her.

The meeting was held on the evening of the 22nd of April; addresses were made; subscriptions were received. When the meeting closed a grand total of \$4,244,670 had been subscribed.

Much effective work was done during the remainder of 1899 towards raising the local popular subscriptions to \$5,000,000 and getting the subscriptions signed in binding form. It was understood that the proposed appropriation of \$5,000,000 by Congress would be made available only on proof that St. Louis had raised and expended \$10,000,000 for the Exposition; also, that satisfactory evidence of the ability and willingness of St. Louis to provide this \$10,000,000 must be produced before the bill could be prudently submitted to a vote in Congress. Before the precedent condition could be realized, a constitutional amendment had to be approved by the voters of Missouri at the election of 1900, and a charter amendment by the voters of St. Louis at the same election. All of the necessary work for the successful accomplishment of these preliminary steps was done, and the brilliant result proved that it was well done. Trade organizations and the great financial and industrial corporations in the principal cities were impressed with the importance of the enterprise, and popular interest in its success was aroused all over the Union. Even President McKinley in his western tours, in October of that year, endorsed the Louisiana Purchase Exposition in his speeches.

CHAPTER IV

AT WASHINGTON

A Special Committee of the House—The Hearing—Bill Reported Without Recommendation - Sundry Civil Amendment—Test Votes Congress Committed—Distribution of the Support—Bill Favorably Reported—Chairman Tawney’s Statement—Charleston Complication—Success on the Last Day of the Session

IN February 1900, the movement had progressed so favorably that formal action by Congress was sought. Bills were introduced in the Senate and in the House committing the government to the endorsement and support of the proposition.

A resolution presented in the House by Representative Joy provided that the Speaker be authorized “to appoint a special committee to be composed of nine members to which shall be referred a bill this day introduced, entitled, “A bill to provide for celebrating the 100th anniversary of the purchase of the Louisiana Territory by the United States by holding an international exhibition of arts, industries, manufactures and the products of the soil, mine, forest and sea.”

The Missouri delegation met and organized for effective work in both branches of Congress to promote the movement. A delegation of St. Louisans visited Washington and remained there some time. In March the resolution was adopted and the special committee was appointed consisting of James A. Tawney, of Minnesota, chairman, George W. Steele of Indiana, Charles H. Burke of South Dakota, John Sharp Williams of Mississippi, James Schoolcraft Sherman of New York, John B. Corliss of Michigan, Charles L. Bartlett of Georgia, Peter J. Otey of Virginia and Charles F. Joy of Missouri.

On the 27th of April the World’s Fair representatives in Washington were given a hearing before this special committee. Several governors and other distinguished citizens from states in the Louisiana Purchase came to Washington to appear at this hearing. Among them: Governor Shaw of Iowa, Governor Jones of Arkansas, President Pitkin of the Trans-Mississippi Congress, Lieutenant-Governor Gilbert of Nebraska, Attorney-General Campbell of Colorado, ex-Governor Hubbard of Texas, ex-Governor Bradford L. Prince of New Mexico, Judge J. D. Slonecker representing Governor Stanley of Kansas, D. D. Leach of Oklahoma City representing Governor Barnes of that territory.

The hearing occupied four hours, members of the committee manifesting much interest as the consideration progressed.

In the course of his remarks Governor Shaw of Iowa said:

I believe that we ought to have this exposition. I recognize the suggestion made by my friend, Mr. Corliss, that this money comes out of the hands of the common people, and that men who have little savings, a few dollars saved up and put by, spend it in this way, and I do not always approve of it; but I don't believe that people who would go to this kind of show will not go to some other. There are states in the Union where people sometimes mortgage their cook stoves to go to the circus; I don't believe in that, and I don't think we ought to encourage it. Nevertheless, it is a fact that a great international exposition now, and when I say now, I mean in the future, will be of untold advantage to us as a people, and we can have one in the future such as has never been seen beneath the skies as yet, and cannot be again until the Louisiana territory has another. I think it would be, as I say, of great and untold advantage to us.

In the course of his address Governor Jones of Arkansas said:

When we come to consider that the population of the United States, at the time of the Louisiana Purchase did not exceed five million souls, and consider what the Louisiana Purchase was at the time, composed of as heterogeneous a class of people as ever existed upon the face of the earth—wild, woolly and savage and semi-civilized—and some pretty well civilized, a few—now, after 100 years, I would like to have the nations of the world come and see what a paradise we have. The like of it was never shown in the history of the world before, and I don't believe that there is any people in the world, excepting the American people, who could accomplish such a wonder.

Ex-Governor Bradford L. Prince of New Mexico, in the course of his remarks, said:

This proposed exposition will be a great national celebration of a great national event. It will exercise an educational influence upon all of our people. The Congress could not do better for the people or the United States than to give this exposition the support which is solicited. The educational advantages which will accrue from it should outweigh any consideration of dollars and cents.

Following the hearing, the special committee held several meetings, as the result of which in May it was decided that the measure be reported back to the House without recommendation. The motion to report the bill favorably was lost on a tie vote in the committee. A resolution to recommend that further consideration of the bill be deferred during the present session of Congress was lost by a tie vote. The motion to report the bill back for consideration without recommendation by the committee was carried by a vote of four to two.

Then ensued delay in the House because of inability on the part of the friends of the measure to obtain the consent of the Speaker for a vote on the bill. A petition requesting that the bill be permitted to go to vote by the House received the signatures of two-hundred and seventy-five members.

At a later meeting of the special committee of the House, Chairman Tawney was directed to report the bill to the House and to press for a vote upon it at that session of Congress. The action of the committee showed that the project was growing in favor.

As the session was nearing an end the friends of the movement endeavored to initiate action in the Senate. Senator Cockrell presented the draft of an amendment to an appropriation bill in the following form:

For defraying the expenses of the Louisiana Purchase Exposition commission when

appointed, \$10,000; and when the Louisiana Purchase Exposition of 1903, a corporation under the laws of the State of Missouri, shall have raised, to the satisfaction of the Secretary of the Treasury, \$10,000,000 for and on account of inaugurating and carrying forward an exposition at St. Louis, Mo., to celebrate the one hundredth anniversary of the purchase of the Louisiana territory by the United States, then the United States will authorize the expenditure of the sum of \$6,000,000 for such exposition, to be disbursed under the direction of "the Louisiana Purchase Exposition of 1903," Under rules and regulations to be prescribed by the Secretary of the Treasury.

Provided, however, that said sum of \$6,000,000 shall not be expended until the said sum of \$10,000,000 raised by said Louisiana Purchase Exposition of 1903, shall have been expended for and on account of said exposition, and there shall be repaid into the treasury of the United States the same proportionate amount of the aid given by the United States shall be repaid to either the corporation or the city of St. Louis.

On the 28th of May this amendment passed the Senate without debate and without a dissenting vote, being incorporated in the sundry civil bill. It had the unanimous support of the committee in charge of the bill and of the exposition committee of the Senate. The sundry civil bill was sent back to the House containing this amendment. The bill went to conference between the Senate and House. A second time, on the 31st of May, the Senate voted in favor of the amendment for the Louisiana Purchase Exposition.

On the 4th of June the first test vote on the World's Fair measure was reached in the House. It resulted in favor of the amendment of the sundry civil bill as it came from the Senate by a vote of 127 to 75. The motion was to concur in the amendment as incorporated in the sundry civil bill by the Senate. This carried by *viva voce* vote. Then a division was demanded. The members rose and were counted by the Speaker: 106 for the amendment and 68 against it. The opposition demanded a roll-call. Friends of the Purchase stood by magnificently. The result of the roll-call was 127 yeas to 75 nays. This fixed the World's Fair amendment as part of the sundry civil bill and committed Congress to the project.

The vote of 127 ayes analyzed, showed 64 Republicans, 56 Democrats, and all of the Populists and Silverites recorded in the affirmative.

The distribution of the support was remarkable, 37 of the 45 states contributed to the 127 votes.

Of the eight states from which no affirmative votes were given, six were among those having the smallest representation. In several cases the representatives from these states were paired for the bill.

It might be said that, except when moved by some great patriotic impulse, the House very rarely has gone on record with such general support of a measure by all sections of the country.

Every Southern state cast votes for the promise of \$5,000,000 conditional on the action proposed by St. Louis and Missouri.

With the leaders of the House the conclusion was that if St. Louis performed its part of the contract the appropriation should be made at the subsequent session of Congress. The contract was fulfilled. On January 12, 1901, the popular subscription of \$5,000,000 by the citizens of St. Louis was completed, and on January 30th following the St. Louis municipal assembly passed the ordinance authorizing the issue of \$5,000,000 of city bonds in aid of the Exposition. Certification of these two splendid performances were promptly and formally sent to Washington.

At the next session of Congress, the bill was perfected in the special committee and on the 5th of February 1901, the chairman was directed by the committee to report it favorably. The roll-call in the committee showed only two dissenting votes. Opposition which had been strong and aggressive in the first session gradually disappeared at the second session, the Speaker and other leaders of the House taking the position that Congress had conditionally committed itself. The only questions asked were as to the performance of the conditions by the people of St. Louis.

The bill was accompanied by a statement made to the House by Chairman Tawney which contained the following:

Because of the number of expositions held in recent years and the number now on the way, I have heard members say: "it is about time for the government to go out of the show business." The time may have come, as the gentleman from Iowa (Mr. Hepburn) remarked the other day, "for the government to go out of the side-show business," but I do not think the time should ever come when the American people should be denied congressional authority and federal aid for the appropriate celebration of those great and far-reaching events in their history which distinctly mark the beginning and progress of our national life and great industrial development-events which in less than a century and a quarter, have made our nation a world power and compelled respect for its flag, whether on land or on sea, or wherever it floats on the planet. It may, therefore, be of interest, in view of this criticism, to know that previous to this time, Congress has authorized and directly aided only two international expositions. The first was to commemorate the centennial anniversary of the birth of American independence, at the city of Philadelphia, the second to commemorate the four hundredth anniversary of the discovery of our country, at the city of Chicago. All other expositions have been held under state authority where the federal government, like the states, was merely a participant in the form of an exhibitor.

Congress having never authorized or aided but two international expositions there is no ground whatever, no justification for the claim that the Louisiana Purchase Exposition should not be authorized, unless the event is not of sufficient importance to justify the exercise of national authority for that purpose and the expenditure of money from the federal treasury.

But, in my Judgment, we have no right to withhold our support from this measure upon this or any other ground. By the act from which I quoted at the beginning of my remarks I maintain that the government is as completely bound to give authority for this exposition and appropriate money for the same as an individual would be bound to comply with the conditions of his solemn contract. The people of St. Louis having complied in every particular with the conditions which Congress imposed, the contract, so far as they are concerned, is now an executed one, and there is nothing for us to consider, as I said before, except the manner in which the appropriation is to be expended and the limitations and restrictions upon the powers and authority of the two bodies under which the exposition is to be given.

But, if we stop and consider the importance of the event which it is proposed to commemorate, we must all admit that it justly occupies a place by the side of our triumph for liberty and the victory of the Union over the notion of a states' rights confederacy. The glory of this achievement and the memory of the men who wrought it by peacefully plucking from both Great Britain and France that splendid piece of territory out of which we have carved twelve of the brightest stars that now adorn our national firmament, deserve to be commemorated in a manner befitting a nation which by that

acquisition has become the greatest nation on earth.

By this achievement the policy of American territorial expansion was inaugurated by the founders of our republic. By it they annexed an empire greater in extent than the states then comprising the Union; an empire seven times greater than that of Great Britain and Ireland; more than four times the size of the German Empire or of France; three times greater than that of Spain and Portugal; an empire even greater in area than Great Britain, Germany, France, Spain, Portugal and Italy combined. But it is not the magnitude or territorial extent of this purchase that makes its acquisition one of the most important events in our national life. It is the wisdom, the far-sighted statesmanship of the men who saw the opportunity of strengthening forever the power of the United States, and who had the courage to take advantage of it and thus insure our future peace with all European nations, together with the magnificent result, we as a nation have achieved with this territory, a part of the United States, that marks this event as one of the greatest in our history, and that has created in the hearts of the people the patriotic desire to commemorate appropriately this grand achievement wrought by the founders of our republic by the peaceful acquisition of this imperial domain.

There is no fact in our national history that speaks more eloquently in behalf of the progressive spirit of our people than the developments wrought throughout this territory in the last century. With the extension of American sovereignty over this domain came the American husbandman, artisan, and merchant trader, not for the purpose of preying upon the native redman, as the Spanish, English and French had done for more than a century, but to settle and develop the country, to make happy, prosperous and free homes, to add to the national wealth and to open the way for the more rapid advance of Christian civilization.

At the time of this purchase nineteen-twentieths of the territory embraced in it was unpeopled save by wild beasts and savages. The rivers flowed unvexed by the fretting wheels of commerce; on the broad prairies the flowers bloomed and died with none to note their beauty or to enjoy their fragrance; luxuriant grasses ripened in summer airs, rotted and enriched a soil on which no harvest waved. In less than half a century all this was changed. The strong hand of the early pioneer was laid upon the mighty forces of nature, bringing them under his complete control.

Things seemingly impossible at the time of the acquisition of this territory have been realized. Harvests now ripen in the fields; villages now cluster in the valleys; cities sit queen-like by the side of lakes and rivers, where, within the memory of men yet living, blazed the wigwam fires of the noble redman; mines are rapidly giving up their hoarded wealth; hammers thunder in mills and factories; steamers come and go: by the steel rail the flying train now traverses almost every foot of this territory; from one end of it to the other lightning leaps responsive to the voice and touch of man; school-houses are everywhere seen, while on every prairie and in every valley throughout this vast domain church spires point toward heaven.

Nowhere in the history of the world can be found a more marvelous development in the short space of one hundred years than that wrought by the people inhabiting the states formed out of the Louisiana Purchase, which fact they will have an opportunity of exhibiting to the world at this proposed exposition.

On the 19th of February the bill was favorably reported in the Senate by Senator Depew, chairman of the exposition committee. Favorable action was assured, although the actual voting on the measure was postponed from day to day on account of other business. In the Senate, the 23rd of February, the bill passed, but unfortunately was amended in several ways to make it unacceptable

to the House. One of these amendments attached the entire Charleston Exposition bill. Another amendment required that the gates be closed on Sundays. The latter amendment was accepted by the House. From the date of passage in the Senate until almost the closing hours of the session the two bodies disagreed on the Charleston amendment. The Senate also desired to add to the bill an amendment covering an appropriation for the Pan-American Exposition at Buffalo. The House remained firm against the amendment. A motion to concur in the Charleston appropriation was lost in the House by a vote of 77 ayes to 139 noes.

It was the legislative day of March 2, 1901, but the dawn of March 4 when the fruition of their labors with Congress came to the World's Fair workers at Washington. The sentiment of joy and congratulation was almost beyond expression. Handshaking was too commonplace. When somebody, who had been helpful and loyal to the Louisiana Purchase Exposition through the long, wearying struggle was met, he was embraced like a brother.

The strain of the forty-eight hours preceding the final passage of the appropriation was intense on all who were interested. The Senate had attached to the Louisiana Purchase Exposition bill appropriations for the Buffalo and Charleston Expositions. The situation was plain. Friends of Buffalo and Charleston wished to compel the House to support those appropriations with that of the Louisiana Purchase Exposition. From Saturday night to early Monday morning, the struggle continued. The Senate's position was that it must be the three expositions together or nothing. On the other hand, the House insisted that Charleston and Buffalo must be kept separate from the Louisiana Purchase Exposition. In this crisis, the friends of the Louisiana Purchase kept their heads. They antagonized nowhere. Thus, it was that, when the time came for conclusions early Monday morning, the workers for St. Louis were in admirable position to reap the benefit.

At 5 :00 o'clock Monday morning, Senator Tillman, of South Carolina, after a long private consultation, informed friends of the Louisiana Purchase Exposition that he would no longer insist upon the provision for Charleston but would let the St. Louis measure go through.

It was growing light beyond the Anacostia hills when Senator Vest, who had remained on guard all night in the hope of such an opportunity, called up the conference report on the Louisiana Purchase bill, which had been sidetracked since the decision of the Senate to put the three exposition appropriations together in the sundry civil bill. How very much in earnest the Missouri Senator was, his presence throughout the night showed.

The Senator spoke briefly, not much more than three minutes. He was putting the finishing touch upon a work which represented months of devotion. His part in the Louisiana Purchase Exposition legislation, he had looked upon as the crowning achievement of his closing public career. The consent of Senator Tillman had been won after many approaches and appeals.

Delicately and eloquently, Senator Vest presented the argument why the Senate should recede from the Charleston amendment to the St. Louis bill. The final passage of the appropriation for St. Louis he asked as an act of justice. He spoke in exceeding kindness toward Charleston, and voiced the wish that the city might receive the appropriation, but he urged that if the House would not yield, as the conferees represented, it was not fair that St. Louis should suffer.

The vote was taken. Only ten Senators voted to retain Charleston in the bill with St. Louis. It was all over. In fifteen minutes, the formal solution had been effected.

Chairman Tawney took personal charge of the bill in the House and also followed it through the routine course to final disposition. There was a rush of work over other measures in a forward state. The time elapsed when the bill might reach the White House to be signed. Mr. Tawney saw that it was hurried at every possible stage, but not until the President had reached the capitol and was near the bottom of the large heap of passed bills was the Louisiana Purchase Exposition measure brought in for his signature. Within fewer than thirty minutes after the bill had become law, the Fifty-sixth Congress had expired. The bill was enacted just as it was reported from the special committee by Congressman Tawney, with the single addition of the Sunday closing amendment. It carried an appropriation of \$5,000,000, available when the Louisiana Purchase Exposition corporation should have expended \$10,000,000. It provided for a national commission of nine members to represent the government. It extended national sanction and national status more generously and more directly to this exposition than had been done in all previous exposition legislation.

The work required to secure this legislation by the Congress was laborious and trying. It extended through two sessions-1899 and 1900-and 1900 and 1901. During the former session, the chairman of the executive committee was in Washington seven weeks, and during the latter session, four weeks; a great portion of that time he was accompanied by Treasurer Wm. H. Thompson, and throughout by Corwin H. Spencer and Seth W. Cobb. Visits to the national capital in behalf of the measure were made by C. W. Knapp, Nathan Frank and other members of the Committee of Two Hundred, all of whom rendered faithful, intelligent and effective assistance.

PRE-EXPOSITION

May 1901-April 1904

CHAPTER I

ORGANIZATION

Louisiana Purchase Exposition Company—The Incorporation—Election of the First Board of Directors—Officers Chosen—By-Laws Adopted—Standing Committees—Few Changes in the Original Organization—The Formal Beginning

THE Louisiana Purchase Convention, held in January 1899, was the formal beginning of the movement which culminated in the Universal Exposition of 1904. It resolved that for a worthy celebration of the centennial Congress should appropriate \$5,000,000, St. Louis should raise by popular subscription \$5,000,000, and the city of St. Louis should issue \$5,000,000 in municipal bonds. Throughout the preliminary period, each of these three steps, vital to success, was dependent upon the other two.

The passage of the constitutional amendments by the state in November 1900, the completion of the popular subscription by citizens in January 1901, and the appropriation by Congress, in March 1901, brought the enterprise to its actual beginning.

Following the enactment by Congress, the subscribers to the stock incorporated under the laws of the State of Missouri the "Louisiana Purchase Exposition Company." To do this, it was necessary that ten percent of the capital stock should be paid in. The call for this payment was not justifiable until after the action of Congress. It was issued promptly, going into effect March 12, 1901. Early in April, the ten percent had been secured, and the articles of incorporation were obtained.

Immediately following, the subscribers to the stock, who had paid the ten percent on subscription, elected ninety-three Directors, of whom thirty-one were to serve one year, thirty-one two years, and thirty-one three years. The election resulted in the choice of the following:

To Serve One Year:

William H. Thompson,	C. F. G. Meyer,	A. H. Frederick,
James L. Blair,	Julius J. Schotten,	Charles H. Huttig,
Andrew A. Allen,	George M. Wright,	William Hill Lee,
Adolphus Busch,	Robert H. Stockton,	W. F. Nolker,
John D. Davis,	J. J. Wertheimer,	Jonathan Rice,
Lewis D. Dozier,	Fred W. Lehmann,	Herman W. Steinbiss,
Howard Elliott,	Daniel M. Houser,	J. J. Turner,
August Gehner,	George A. Baker,	W. H. Woodward,
Breckinridge Jones,	Seth W. Cobb,	George A. Madill,
William J. Lemp,	Alexander N. De Menil,	Peter A. O'Neill.

To Serve Two Years:

David R. Francis,
Wilbur F. Boyle,
James G. Butler,
Samuel M. Dodd,
Samuel M. Felton,
W. T. Haarstick,
M. E. Ingalls,
Thomas J. McKittrick,
Joseph Ramsey, Jr.,
Issac Schwab,

Samuel Spencer,
J. C. Van Blarcom,
Charles G. Warner,
Charles F. Wenneker,
A. A. B. Woerheide,
Corwin H. Spencer,
Charles W. Knapp,
Paul Brown,
James F. Coyle,
Robert B. Dula,
Norris B. Gregg,

Walker Hill,
Samuel M. Kennard,
F. G. Niedringhaus,
David Ranken, Jr.,
John Scullin,
James E. Smith,
Charles A. Stix,
Julius S. Walsh,
William B. Wells,
Edwards Whitaker.

To Serve Three Years:

Pierre Chouteau,
John Schroers,
Nicholas M. Bell,
Alanson D. Brown,
James Campbell,
George T. Cram,
Stuyvesant Fish,
John A. Holmes,
W. J. Kinsella,
James W. McDonald,

Edward S. Orr,
H. Clay Pierce,
R. M. Scruggs,
E. C. Simmons,
Festus J. Wade,
B. F. Yoakum,
Nathan Frank,
William C. Steigers,
Cyrus F. Blanke,
George Warren Brown,
Murray Carleton,

George L. Edwards,
Augustus B. Hart,
Goodman King,
Dr. J. J. Lawrence,
Daniel C. Nugent,
George W. Parker,
Clark H. Sampson,
Alfred L. Shapleigh,
Charles H. Turner,
Cyrus P. Walbridge.

To fill vacancies occasioned by the resignations of E. C. Simmons and Stuyvesant Fish, the Board of Directors elected Walter B. Stevens and Issac W. Morton.

On the second of May, the Directors held their first meeting and organized by the election of the following officers:

David R. Francis.....	President
William H. Thompson	Treasurer
Walter B. Stevens	Secretary
James L. Blair.....	General Counsel
Corwin H. Spencer	First Vice-President
Samuel M. Kennard	Second Vice-President
Daniel M. Houser	Third Vice-President
Cyrus P. Walbridge.....	Fourth Vice-President
Seth W. Cobb	Fifth Vice-President
Charles H. Huttig.....	Sixth Vice-President
August Gehner	Seventh Vice-President
Pierre Chouteau	Eighth Vice-President

In 1903, Franklin Ferriss was elected general counsel, to succeed James L. Blair, resigned. With this exception the officers elected at the first annual meeting of Directors continued during the pre-exposition and exposition periods.

The original Board of Directors underwent little change. Including all who were elected, the Board was composed of the following:

Andrew A. Allen,	William M. Greene,	*Jonathan Rice,
Lorenzo E. Anderson,	Norris B. Gregg,	Clark H. Sampson,
*George A. Baker,	*W. T. Haarstick,	Julius J. Schotten,
Nicholas M. Bell,	Augustus B. Hart,	*John Schroers,
William K. Bixby,	Walker Hill,	*Issac Schwab,
Cyrus F. Blanke,	*F. D. Hirschberg,	John Scullin,
*James L. Blair,	John A. Holmes,	*R. M. Scruggs,
*Wilbur F. Boyle,	Daniel M. Houser,	Alfred L. Shapleigh,
Alanson D. Brown,	Charles H. Huttig,	E. C. Simmons,
George Warren Brown	M. E. Ingalls,	James E. Smith,
Paul Brown,	*Halsey C. Ives,	*Corwin H. Spencer,
Adolphus Busch,	Breckinridge Jones,	Henry B. Spencer,
James G. Butler,	Samuel M. Kennard,	*Samuel Spencer,
James Campbell,	Goodman King,	William C. Steigers,
Murray Carleton,	W. J. Kinsella,	Herman W. Steinbiss,
*Pierre Chouteau,	Charles W. Knapp	Walter B. Stevens,
*Seth W. Cobb,	*J. J. Lawrence,	Charles A. Stix,
James F. Coyle,	William Hill Lee,	Robert H. Stockton,
*George T. Cram,	*Wm. J. Lemp,	George J. Tansey,
Hanford Crawford,	Wm. J. Lemp, Jr.,	Issac S. Taylor,
John David Davis,	Fred W. Lehmann,	Collins Thompson,
Horatio N. Davis,	*James W. McDonald,	*William H. Thompson,
Alex. N. De Menil,	Benjamin McKeen,	*Charles H. Turner,
*Samuel M. Dodd,	Thomas H. McKittrick,	J. J. Turner,
Lewis D. Dozier,	*George A. Madill,	*J. C. Van Blarcom,
Harrison I. Drummond,	George D. Markham,	Festus J. Wade,
Robert B. Dula,	George L. Edwards,	Finis E. Marshall,
*C. F. G. Meyer,	Cyrus P. Walbridge,	Julius S. Walsh,
Howard Elliott,	Elias Michael,	*Charles G. Warner,
Samuel M. Felton,	Henry I. Miller,	*William B. Wells,
Franklin Ferriss,	*Issac W. Morton,	Rolla Wells,
Stuyvesant Fish,	F. G. Niedringhaus,	Charles F. Wenneker,
David R. Francis,	*W. F. Nolker,	Jacob J. Wertheimer,
Thomas H. Francis,	Daniel C. Nugent,	Edwards Whitaker,
Nathan Frank,	*Peter A. O'Neill,	Oscar L. Whitelaw,
A. H. Frederick,	*Fred Gabel,	A. A. B. Woerheide,
George W. Parker,	Edward S. Orr,	*W. H. Woodward,
*Gerhard W. Garrels,	Henry Clay Pierce,	George M. Wright,
*August Gehner,	Joseph Ramsey, Jr.,	B. F. Yoakum.
	*David Ranken, Jr.,	

*Deceased.

In June 1901, the Board of Directors was divided into standing committees. The work of preparation for the Exposition was apportioned under the by-laws to these committees which, during both pre-exposition and exposition periods, performed the duties assigned them. It is a matter for congratulation that the by-laws as originally adopted proved to be adequate and were but slightly

LOUISIANA PURCHASE EXPOSITION

amended. The committees were reappointed from year to year with only such changes as were necessitated by the additions to the Board of Directors to fill the few vacancies occurring. The standing committees were:

Committees of Directors:

ORGANIZATION

David R. Francia, *ex-officio* Chairman
 Corwin H. Spencer, *Vice-Chairman*
 Samuel M. Kennard Charles H. Huttig
 Daniel M. Houser August Gehner
 P. Walbridge Pierre Chouteau
 Seth W. Cobb Wm. H. Thompson

EXECUTIVE

David R. Francis, *ex-Officio* Chairman
 Wm. H. Thompson, *Vice-Chairman*
 Charles W. Knapp Corwin H. Spencer
 W. F. Boyle Murray Carleton
 C. G. Warner L. D. Dozier
 John Scullin James Campbell
 Rolla Wells A. L. Shapleigh
 Nathan Frank Breckinridge Jones
 Howard Elliott

FINANCE

W. H. Lee, *Chairman*
 Walker Hill, *Vice-Chairman*
 C. H. Huttig F. E. Marshall
 Wm. H. Thompson, *ex-officio*

WAYS AND MEANS

Festus J. Wade, *Chairman*
 Thos. H. McKittrick, *Vice-Chairman*
 R. B. Dula. Elias Michael
 Dan C. Nugent. W. J. Kinsella
 Geo. M. Wright. C. F. Wenneker
 Benjamin McKeen

CONCESSIONS

George L. Edwards, *Chairman*
 J. J. Wertheimer, *Vice-Chairman*
 W. B. Wells A. L. Shapleigh
 Harrison I. Drummond

TRANSPORTATION

Julius S. Walsh, *Chairman*
 Joseph Ramsey, Jr., *Vice-Chairman*
 S. M. Felton George W. Parker
 H.B. Spencer A. A. Allen
 Murray Carleton

PRESS AND PUBLICITY

R. H. Stockton, *Chairman*
 W. B. Stevens, *Vice-Chairman*
 W. C. Steigers Nathan Frank
 D.M. Houser John Schroers
 Charles W. Knapp

FOREIGN RELATIONS

Adolphus Busch, *Chairman*
 W. F. Boyle, *Vice-Chairman*
 W. T. Haarstick J.C. Van Blarcom
 John D. Davis Dan C. Nugent

SUPPLIES

James F. Coyle, *Chairman*
 J. J. Schotten, *Vice-Chairman*
 Charles A. Stix Hanford Crawford
 J.E. Smith J. W. McDonald
 Paul Brown

SANITATION

C. P. Walbridge, *Chairman*
 Alex. N. De Menil, *Vice-Chairman*
 A. D. Brown C. F. G. Meyer
 Dr. J. J. Lawrence

POLICE

Harrison I. Drummond, *Chairman*
 C.H. Turner, *Vice-Chairman*
 J. J. Wertheimer J. G. Butler
 W. C. Steigers

INSURANCE

George T. Cram, *Chairman*
 A. D. Brown, *Vice-Chairman*

CEREMONIES

C. H. Spencer, *Chairman*
 W. H. Lee, *Vice-Chairman*
 J. G. Butler C. P. Walbridge
 L. D. Dozier Franklin Ferriss
 J. C. Van Blarcom George J. Tansey

GROUNDS AND BUILDINGS

Wm. H. Thompson, *Chairman*
 S. M. Kennard, *Vice-Chairman*
 W. F. Nolker John A. Holmes
 H. W. Steinbiss John Scullin

LEGISLATION

D.M. Houser, *Chairman*
 W. C. Steigers, *Vice-Chairman*
 Nicholas M. Bell James Campbell
 F. G. Niedringhaus Beth W. Cobb
 George W. Parker

AGRICULTURE

Paul Brown, *Chairman*
 Fests J. Wade, *Vice-Chairman*
 Nicholas M. Bell David Ranken, Jr.
 Wm. J. Lemp, Jr. C. F. Blanke
 Julius S. Walsh

FINE ARTS

W. K. Bixby, *Chairman*
 S. M. Dodd, *Vice-Chairman*
 J. E. Smith Thomas H. McKittrick
 Adolphus Busch H. B. Spencer
 Howard Elliott

MINES AND MINING

W. J. Kinsella, *Chairman*
 John D. Davis, *Vice-Chairman*
 David Ranken, Jr. A.H. Frederick
 C. F. G. Meyer

STATE AND TERRITORIAL EXHIBITS

C. H. Huttig, *Chairman*
 A.H. Frederick, *Vice-Chairman*
 J. J. Schotten Benjamin McKeen
 F. E. Marshall J. W. McDonald

MANUFACTURERS AND LIBERAL ARTS

George W. Parker, *Chairman*
 Goodman King, *Vice-Chairman*
 W. H. Woodward Elias Michael
 James F. Coyle C. F. G. Meyer
 George Warren Brown

ELECTRICITY AND ELECTRICAL APPLIANCES

J. E. Smith, *Chairman*
 Joseph Ramsey, Jr., *Vice-Chairman*
 Charles A. Stix A. A. Allen
 August Gehner B. M. Dodd

FISH AND FISHERIES

Beth W. Cobb, *Chairman*
 A. B. Hart, *Vice-Chairman*
 B. Clay Pierce Harrison I. Drummond
 George M. Wright C. G. Warner
 J.C. Van Blarcom W. M. Greene

ANTHROPOLOGY AND ETHNOLOGY

F. W. Lehmann, *Chairman*
 Goodman King, *Vice-Chairman*
 Walker Hill A. A. B. Woerhelde
 Edwards Whitaker C. F. Blanke
 H. B. Spencer

AERONAUTICS

Charles W. Knapp Nathan Frank

SALVAGE

David R. Francis, *Ex-Officio Chairman*
 W. H. Thompson B. M. Kennard
 John A. Holmes John Scullin

RESTORATION OF THE PARK

David R. Francis, *Ex-Officio Chairman*
 Corwin H. Spencer. W. K. Bixby
 James Campbell Elias Michael
 C. H. Huttig

EDUCATION AND EDUCATIONAL CONGRESSES

John Schroers, *Chairman*
 R. B. Dula, *Vice-Chairman*
 A. A. B. Woerheide A. L. Shapleigh
 W. H. Woodward George W. Parker
 George J. Tansey

HISTORY

Pierre Chouteau, *Chairman*
 Alex. N. De Menu, *Vice-Chairman*
 A. B. Hart W. T. Haarstick
 W. H. Woodward George T. Cram
 W. J. Lemp, Jr.

SOUVENIR GOLD DOLLARS

J. C. Van Blarcom, *Chairman*
 W. H. Lee C. H. Huttig
 Walker Hill Festus J. Wade

INTERNATIONAL CONGRESSES

F. W. Lehmann, *Chairman*
 Charles W. Knapp Breckinridge Jones
 John Schroen A. L. Shapleigh

RECEPTION AND ENTERTAINMENT

F. D. Hirschberg, *Chairman*
 Rolla Wells, *Vice-Chairman*
 John D. Davis Thomas H. McKittrick
 Dan C. Nugent John Schroers
 W.F.Boyle

MEMBERS OF THE BOARD OF ARBITRATION

W. F. Boyle Charles W. Knapp

CHAPTER II

SITE AND PLANS

Forest Park and Adjacent Tracts—The Commission of Architects—Evolution of the Main Picture—Approval by the Board of Directors—Plan and Scope Adopted—Four Principal Divisions Established—The President, the Executive Head—Four Directors of Divisions.

DURING the month of May 1901, the municipal assembly, with the approval of the mayor, tendered by ordinance the use of any of the public parks-in part as to Forest, in whole as to the others-for the World's Fair site.

To the selection of a site for the Exposition, the Executive Committee immediately after its organization devoted its attention. It was recognized that the Plan and Scope of the Exposition demanded a site of large proportions. The work was conducted most thoroughly. After four weeks of almost daily sittings and hearings, the committee voted in favor of Forest Park. The decision was reached on June 24th. On June 25th it was submitted to the Board of Directors, and approved unanimously, with enthusiasm. On June 26th, the site was reported to the National Commission for its consideration. On June 28th, the commission announced that it had, without a dissenting vote, confirmed the location.

The selection of the western half of Forest Park for the site was accepted and approved by the sentiment of the city. The location was endorsed as admirable by the press, and by the country at large.

The result of a suit to enjoin the use of the park for the purpose served to emphasize the unanimity of approval. The petition was argued, and the injunction was denied after a week's consideration.

The selection of a portion of Forest Park gave to the Exposition 657 acres. This, it was soon decided, would not afford sufficient space for the plans in contemplation. Negotiations were opened looking to the annexation of additional territory for exposition purposes. There were added to the park site, by lease, the campus and model buildings of Washington University; five tracts south of Washington University, extending to Clayton Road and westward from Skinker Road; a portion of the Parkview Realty Company's property, being a strip lying along the north line of Forest Park, extending from De Baliviere avenue to Skinker Road. These additions gave a site about one and three quarters miles long, east to west, by one and one-quarter miles wide, containing over 1,270 acres.

The total area of the four largest expositions this country has known-the Centennial at Philadelphia, the World's Columbian at Chicago, the Trans-Mississippi at Omaha, and the Pan-American at Buffalo-was 1,319 acres, only a few acres more than was embraced within the World's Fair grounds at St. Louis.

The various tracts and parcels embraced within the World's Fair grounds as shown by the surveys of the department of civil engineering, under H. R. Fardwell, principal assistant engineer, were as follows:

	Acres
Forest Park.....	657.36
Washington University.....	108.9
Buchanan Tract	79.6
DeMun Tract	105.7
Maffitt Tract	106.2
Skinker Tract and Zeibig Boulevard.....	80.7
Tesson Tract	48.6
Catlin Tract	69.6
Park View Realty Company	1.5
Right-of-Way, St. Louis Traction Company.....	1.8
Skinker Road	14.1
Forsyth Boulevard	7.7
Total Acres.....	1,271.76

Immediately after the determination of the Forest Park portion of the site, a commission of architects and landscape engineers, representing all parts of the country, was assembled in St. Louis, in response to invitations sent out by the Committee on Grounds and Buildings. The commission was organized with nine firms of architects, as follows:

Commission of Architects:

Isaac S. Taylor, Chairman, St. Louis	
Eames & Young, St. Louis.	Theodore C. Link, St. Louis.
Barnett, Haynes & Barnett, St. Louis	Case Gilbert, St. Paul and New York
Carrere & Hastings, New York	Van Brunt & Howe, Kansas City
Widmann, Walsh & Boisselier, St. Louis	Walker & Kimball, Omaha and Boston

The commission organized immediately for active work in the preparation of plans. Several meetings of the members of the commission were held in St. Louis during the summer. The work proceeded with such energy, that, in October, the commission was prepared to present a general plan for the architecture of the Exposition, providing for nine exhibit palaces.

In its conception and in its details, this general plan departed from those of previous expositions. Advantage was taken by the architects and engineers of the opportunities Forest Park site afforded in its topography.

The end of October brought the submission of the ground plan with the nine original buildings indicated to the Board of Directors and to the National Commission. Both bodies accepted and approved by unanimous votes the work of the commission of architects.

Showing the evolution of "The Main Picture," which was upon entirely new lines of exposition architecture, the following from the report of the chairman of the Commission of Architects, Isaac S. Taylor, is pertinent:

On July 9, 1901, the first meeting of the members of the Commission of Architects was held at the Planters Hotel; it was a meeting of great moment and with high expectations in the thoughts of each and every one present; it was the beginning of a most active

and laborious campaign, and marked the initiation of work that was to be submitted to the criticism of the world-work that must fill a multitude of practical requirements and work that must strive, by its artistic effects, for the admiration of all peoples. It is now a matter of history as to how well each and every one performed his task, and the judgment of the world has been passed as to the success or failure. Whatever this judgment may be, there is no question but that the architects selected by the Louisiana Purchase Exposition Company entered into the work with earnestness and enthusiasm, and in many cases with devotion; their expressions of thought, their labor, their knowledge and their love graced the plains and the hills of the grand old park, forming a picture that will linger in the brains and hearts of those that trod its many ways long after the eyes are dimmed and past seeing.

The meeting of July 9th was called to order by W. H. Thompson, chairman of the Committee on Grounds and Buildings; the following were present or represented:

Eames & Young

Barnett, Haynes & Barnett

Widmann, Walsh & Boisselier

T. C. Link

Cass Gilbert

Van Brunt & Howe

Mr. Blake, representing Carrere & Hastings, was delayed in transit

Messrs. Walker & Kimball were not able to be present

In the afternoon of July 9, 1901, the Fair site was inspected by the architects. After this inspection, one of the first matters considered was the apparent necessity of acquiring a more extended area of ground to the north and to the west of the park site; this ground was subsequently acquired by the Exposition Company as previously stated in this report.

From the time of the first meeting of the Commission of Architects up to the 8th of October 1901, there were numerous meetings, in which the work in general was thoroughly discussed; the general distribution and placing of the buildings, which is technically known as the "lay out plan," was formulated; assignments of buildings to the different architects composing the commission were made, and matters pertaining to technique, construction, architecture, mural decorations and sculpture taken in hand. "The picture" was decided upon.

In furtherance of the general scheme the following resolutions were passed at a meeting of the commission:

That color shall be an important feature of the Exposition, but that the scheme as a whole shall not depend upon color decoration.

That a uniform module and scale shall be adopted for all parts of the main composition and its accessories, and so far as possible for the state and adjunct buildings.

That a classic and academic style be used in the main group of buildings following closely the purer types.

The commission appointed a committee to put a form of arrangement of buildings, as suggested by the commission as a whole, into a scale plan representing the suggested plan in one or more forms; this committee reported and presented three plans:

First. A development of the scheme as instructed.

Second. An entirely new departure, showing a fan-like group of buildings with a central pivot and radiating vistas with a circular boulevard at its extreme limits.

Third. A new presentation of a formal scheme on different lines than either of the above.

Other studies were presented by members of the commission showing the results of their individual study.

A plan was also submitted contemplating the use of the high and wooded ground on the south of the park for the great group of buildings with the main entrance from Kingshighway.

After a serious discussion of the several plans submitted for the grouping and placing of the main exhibit buildings, it was unanimously decided:

That the fan-shaped plan with the radiating vistas and curved boulevards be recommended to the Committee on Grounds and Buildings for its adoption, subject to all needful elaboration and adjustment of the grounds.

At a meeting the Commission of Architects recommended to the Committee on Grounds and Buildings that the office of chief of design be created, and recommended Emanuel L. Masqueray for the position; Mr. Masqueray was appointed and began services with the Exposition Company on August 23, 1901.

At a meeting of the Commission of Architects, on September 21, 1901, the chairman of the commission made the following assignment of buildings:

Liberal Arts, Carrere & Hastings.
Mines and Metallurgy, Van Brunt & Howe.
Transportation, Widmann, Walsh & Boisselier.
Art Building and Annexes, Cass Gilbert.
Social Economy, Barnett, Haynes & Barnett.
Education, Theodore C. Link.
Manufactures, Eames & Young. Electricity, Walker & Kimball.

The remaining large buildings were not assigned and were afterward designed by Mr. Masqueray and the employee in the office of the director of works.

In certain cases, the above assignments were subsequently changed, the following were the final assignments:

Liberal Arts, Barnett, Haynes & Barnett.
Mines and Metallurgy, Theodore C. Link.
Machinery, Widmann, Walsh & Boisselier.
Education and Social Economy (one building), Eames & Young.
Manufactures, Carrere & Hastings.
Varied industries, Van Brunt & Howe.
Art Building and Annexes, Cass Gilbert.
Electricity, Walker & Kimball.

Upon making the assignments the chairman submitted suggestions for guidance when making the designs; the following were the principal suggestions:

Few skylights as possible.
Windows to open.
Do not use large steel roof trusses.
Use wooden trusses.
Thoroughly ventilate at roof lines.
Keep main floors of buildings as near the ground as possible.
Put numerous entrances in ends and sides of buildings.
As few galleries as possible.
Top of cornices 65'0" above average grade.
Keep cost within reasonable limits.

It was decided that the scale should be 1/15" to the foot for elevation and sections and 1/32" to the foot for plans. The instructions in the main were followed by the architects.

The architects began the work of designing the structures allotted to them immediately after the assignments, and on October 7, 1901, the designs were submitted to the Commission of Architects for criticism and for a friendly discussion of the merits of same, it being understood that suggestions that would meet with the approval of the commission as a whole would be considered and followed by the designer. The designs, as originally submitted, were of a most excellent order and few changes or modifications

were made. On October 8, 1901, the designs were formally approved by the commission. Shortly after, the designs were submitted to the Committee on Grounds and Buildings and accepted.

While the site was being determined and the plans of buildings were assuming form, the Board of Directors gave careful consideration to the character of the Exposition. As the result of much deliberation, the following Plan and Scope was adopted and announced:

Plan:

The foundation plan of the St. Louis World's Fair will be that of an exposition both national and international in its character, so that not only the people of the Louisiana Purchase Territory, but of our Union, and all the nations as well, can participate. It will be so projected and developed as to ensure the active interest of all the peoples of the world and induce their participation upon a scale without parallel in any previous exposition.

It will present in a special degree, and in the most comprehensive manner, the history, the resources, and the development of the states and territories lying within the boundaries of the Louisiana Purchase, showing what it was and what it is; what it contained and produced in 1803; what it contains and produces in 1903.

It will make plain that the prophecy of 1803 has been more than fulfilled, and show that a veritable empire now lies between the Gulf of Mexico and Puget Sound, within the limits of the territory Jefferson obtained by the Louisiana Purchase.

It will show the history, resources and development of the possessions of the United States, including Puerto Rico, Alaska, Hawaii, Samoa, Guam and the Philippines. It will embrace in a similar portrayal Cuba and any other country which may enjoy the special and exceptional protection and guardianship of the United States.

It will depart from the plan of all past expositions and make life and movement its distinguishing and marked characteristics. To this end it will aim definitely at an exhibition of man as well as the works of man; at the presentation of manufacturing industries in actual conduct as well as the machines out of action; at the exhibition of processes as well as of completed products.

It will carefully plan in the location, the construction and arrangement of all buildings and works so as to assure the highest degree of convenience, ease and comfort for visitors who come to inspect the wonders contained within its enclosure. It will make it both easy and comfortable to get to the Exposition grounds from every quarter of the city, and from every railway terminating in St. Louis. It will in like manner make it easy and comfortable to move about the Exposition grounds, and to pass from building to building, and from point to point within every building of large area. In short, it will make the transportation of visitors the subject of special study, and spare no expense in the solving of this vital problem, so that the St. Louis World's Fair may go down in history as the first great international exhibition which a visitor could inspect without enduring fatigue and hardship.

Finally, it will embody and illustrate the latest and most advanced progress in the employment of the energies of nature. It will be up to date in the use of all new motive forces and be fully abreast with science in the utilization of every novel invention or discovery that has practical value.

Scope:

In order that the general plan outlined for the Louisiana Purchase Exposition may be fulfilled in its actual accomplishments, it will exhibit the arts and industries, the methods and processes of manufacture of the whole world; it will gather the products of the soil, mine, forest and sea from the whole earth.

It will comprehend man in his full twentieth century development, exhibiting not alone his material, but his social advancement. It will show humanity at rest as well as at work, presenting man in his hours of recreation, his exercise, his games and his sports. It will illustrate the modern home with infinity of comforts and conveniences that have been brought into common use within the century the St. Louis World's Fair will commemorate.

It will embrace in its scope a comprehensive anthropological exhibition, constituting a congress of races, and exhibiting particularly the barbarous and semi-barbarous peoples of the world as nearly as possible in their ordinary and native environments.

It will bring together the wild life of the forests, plains and waters, showing visitors a zoological collection of untrained and untamed animals as nearly as practicable with the surroundings of their native state.

The progressiveness of the Exposition will be most especially manifest in the manner and extent of its use of artificial light, both for purposes of illuminating and as a means of decoration. Electric lighting in the latest, most striking and most effective form, as well as other new and efficient modes of illuminating, will be so liberally employed that the Exposition grounds and buildings will blaze with light at night, and their beauties successfully rival the attractions of daylight.

For the development of the Exposition to the full scope outlined, it will provide for the housing and care of exhibits divided into a number of grand sections, each of which will be again divided into departments and sub-departments. The principal sections into which the Exposition was to be divided will be as follows: Agriculture, Anthropology and Ethnology, Athletics and Outdoor Sports and Games, Chemical industries, Civil Engineering, Colonization, Decoration, Furniture, etc., Diversified Industries, Education and Instruction, Electricity, Fine Arts, Food Stuffs, Forestry, History, Horticulture and Arboriculture, Liberal Arts, Machinery, Military and Naval, Mining and Metallurgy, Social Economy, Textiles, Transportation, Wild Animals.

After careful consideration the Board of Directors decided to organize the executive forces upon original lines. The usual order of the selection of a director-general for the executive head was abandoned. There were created four principal executive divisions, presided over by the following officers:

Director of Exhibits,
Director of Exploitation,
Director of Works,
Director of Concessions and Admissions.

The By-Laws prescribed the duties of the directors of divisions as follows:

The director of exhibits shall have charge of all exhibits and of all matters pertaining thereto to the close of the Exposition.

The director of exploitation shall have charge of all matters pertaining to the promotion of interest or participation in the Exposition, upon the part of either exhibitors or visitors, at home or abroad.

The director of works shall have charge of the construction of the buildings, the arrangement of the grounds, and shall have such control of their operation and maintenance, during the Exposition, as is not inconsistent with the authority coordinately conferred upon other officers.

The director of concessions and admissions shall have charge of all matters relating to concessions and shall regulate and control admission to the grounds.

These officers shall be officially advised by the President from time to time as to the scope of their authority, and as to the method by which the duties above outlined shall be performed; rules and regulations issued by the directors of the above executive divisions must receive the approval of the President before promulgation.

For director of exhibits, Frederick J. V. Skiff, of wide exposition experience, was selected. Mr. Skiff had been chief of the department of mines and metallurgy in the World's Columbian Exposition. He had been director-in-chief of exhibits for the American participation at Paris, in 1900. He was at the time of his appointment at St. Louis, director of the Field Museum, at Chicago, a position which he retained, the management of the institution consenting to his acceptance of the office of director of exhibits.

For director of works, Isaac S. Taylor, chairman of the Commission of Architects for the Exposition, was selected. Mr. Taylor was an architect of enviable reputation before he entered upon the duties of director of works a reputation that was not confined to St. Louis.

For director of concessions and admissions, Norris B. Gregg, a member of the Board of Directors of the Exposition, and a very successful manufacturer and business man of St. Louis, was selected.

The office of director of exploitation was not filled until 1903, when Walter B. Stevens was appointed. Mr. Stevens, who was elected secretary of the Exposition Company at its organization and held that position throughout the life of the corporation, performed, with rare ability and admirable fidelity, the duties of director of exploitation, from the creation of the office. His work was performed, as was that of the regularly commissioned directors of divisions, under the supervision of the President, who throughout the periods of preparation, operation and post-exposition, was virtually director-general. Several efforts were made to secure a man suitable for director-general, but they were not successful; therefore, the above plan of organization was adopted, and the experience of all seemed to demonstrate that it was eminently wise, satisfactory and effective in operation.

In connection with all of the important work of the four main divisions, great care was exercised to provide that only such action be taken as would be of sound policy and productive of the most satisfactory results.

To effect and promote this end, and to keep the working agencies of each division in uniform attitude upon all main lines of procedure, frequent meetings of the chiefs of departments were called and held in the office of the respective directors of divisions, at which matters of general and special bearing upon the work of the departments were discussed, and progress of action outlined. In this manner, committees of selected chiefs of departments were appointed to consider proposed action or to report upon details of methods and forms to be employed in special work. No final action of import was taken by chiefs of departments without consultation with and the approval of the directors in charge.

In all procedure requiring the official sanction of the Exposition management or involving the expenditure of considerable sums of money the approval of the President was secured.

All negotiations by departments and sections of one division with departments and sections of another were conducted through the offices of the directors of such divisions, or through the office of the President, when the differences required, or the subjects justified.

CHAPTER III

DIVISION OF EXHIBITS

Scientific and Comprehensive Classification—Characteristics Defined by Director Skiff—Rules and Regulations Drafted—Principal Exhibit Palaces Designated—Organization of Division—Selection of Chiefs of Departments—Inauguration of Work

IN the preparation of plans for the principal Exposition palaces a fundamental consideration was the amount of area which would be required for exhibits. The director of exhibits, upon request, submitted a table of estimates setting forth the areas necessary for the various classes of exhibits essential to a universal exposition of the scope contemplated. These recommendations included thirteen main exhibit palaces of large floor dimensions, exclusive of such exhibit areas or buildings as might be required for livestock or other outdoor exhibits or as would be available in the group of permanent buildings of the Washington University, lease of which for uses of the Exposition was under consideration. This meant an addition of three exhibit palaces to the group originally contemplated. As the need for extensive area was apparent, the recommendations of Director Skiff were adopted; though requirements of economy later resulted in the elimination of one of the principal buildings proposed—that intended for exhibits of textiles—from the group. A further recommendation of the director of exhibits to the effect that no galleries be provided for exhibits in any of the buildings was also adopted and carried out—and, as proved later, to the great satisfaction of exhibitors and the public.

The principal exhibit palaces, as finally recommended for erection, and as designated by Director Skiff, with areas decided upon, were as follows:

	Square Ft.
Education	277,945
Art, Four Sections, Main, East, West, and South	198,448
Liberal Arts	393,760
Varied industries.....	447,900
Manufactures	588,000
Machinery.....	412,800
Electricity	290,200
Transportation	684,254
Agriculture	800,000
Horticulture	240,000
Forestry and Fish and Game.....	180,000
Mines and Metallurgy	395,592

Of these buildings all were to be of temporary exposition construction except the central section of the palace of Art, which as previously indicated, was

to be permanent and of stone. Other exhibit buildings of auxiliary character and smaller size, also additional exhibit areas, were later provided as the need for additional exhibition space developed.

Rules governing participation in the Exposition as outlined and perfected were formally adopted and incorporated in a pamphlet volume, convenient for distribution, under the title of "General Rules and Regulations of the Exposition." These rules, with an official classification of exhibits, were universally disseminated as the official announcement of the Exposition, definitely indicating its character and extent, and, in general terms, what it would offer in exhibit opportunity and facilities to the world.

The invitation conveyed to participate in the Exposition was universal and the conditions indicated most favorable—far more so, indeed, than had ever before been provided. Exhibit space was offered free in magnificent palaces to be equipped complete and set in a spot of beauty that was to be made the center of the interest and attention of the world. Ample and desirable sites for buildings and ground were offered to states and nations, also without charge of any kind. Altogether, the requirements imposed were few and equitable, a principal one being that all exhibits, whether from individual, state, or nation, be installed in the regular exhibit palaces of the Exposition, and not in state, national or individual buildings. This rule was made as a forward step in exposition organization and in accordance with the other plans of the management, based upon the intention of making the Exposition of 1904 the most highly perfected ever assembled.

The classification of exhibits, which was prepared and adopted after much deliberation, was declared to be the most scientific and comprehensive devised. It provided for the following exhibit departments:

Department A, Education	Department J, Horticulture
Department B, Art	Department K, Forestry
Department C, Liberal Arts	Department L, Mines and Metallurgy
Department D, Manufactures	Department M, Fish and Game
Department E, Machinery	Department N, Anthropology
Department F, Electricity	Department O, Social Economy
Department G, Transportation	Department P, Physical Culture
Department H, Agriculture	Department R, Live Stock

The classification of these sixteen departments was subdivided into 144 groups and 807 classes. The theory of this classification and the policy which was carried out in each of the exhibit departments may be described, to quote Director Skiff, in these words:

An exposition classification has three motives: (a) The announcement of the exhibit scope; (b) the plan of installation, and (c) the organization of the jury. It is a prospectus of what the exposition intends to accomplish, and, it complied with, becomes a subject guide to the exhibits. It determines the physical capacity of the exhibit buildings, regulates their proportions, and suggests the character of their construction. It also creates the department into which the work of exploitation may be separated, and, in a manner, defines the duties of the exposition staff.

The highest object that can be obtained in an exposition is such an arrangement of the various occupations and industries of man and their results as will bring about an installation of material, distinct in parts, but harmonious as a whole, giving all economies their proper rank, based upon the processes through which man attains his highest state of development. The classification of an exposition, therefore—the method of the

disposition and presentation of its exhibits-is one of its vital features, regulates, in fact, the degree of its effectiveness and success-records its value to the public and to society.

The classification of the St. Louis Exposition has been highly complimented by the exposition authorities of the world. In regard to arrangement and presentation of exhibits it is credited as surpassing any exposition classification so far devised. It was prepared to present, and in realization constituted, a sequential synopsis of man's development, as indicated by the evidences that have marked his progress. Its sixteen grand departments in their order record what man has accomplished, at this time, with his faculties, industry and skill and the natural resources at his command in the environment in which he has been placed.

At the head of the exposition classification has been placed Education, through which man enters social life. Second, comes Art, showing the condition of culture and its development. Liberal Arts and applied sciences are placed third, to indicate the result of his education and culture, illustrate his tastes and demonstrate his inventive genius, scientific attainment and artistic expression. These three departments equip him for the battle and prepare him for the enjoyment of life. The raw material departments, Agriculture, Horticulture, Mining and Forestry, show how man conserves the forces of nature to his uses. The department of Manufactures shows what he has done with them; the department of Machinery the tools he has used. The department of Transportation shows how he overcome distances and secures access to all parts of the world; the department of Electricity indicates the great forces he has discovered and utilized to convey power and intelligence. And so through the several departments to Anthropology, in which man studies man; and to Social Economy which illustrates the development of the human race, how it has overcome the difficulties of civilization and solved the great problems in which society is involved. Last is placed Physical Culture, in which man, his intelligence having reached its supreme point, is able to treat himself as an animal, realizing that his intellectual and moral constitutions require a sound physical body to prompt them to the proper performance of their functions.

Further illustrating the leading and distinguishing elements and attributes of the Exposition, as indicated by the classification of exhibits, Director Skiff may again be quoted:

At the St. Louis Exposition the prevailing characteristic is to be life and motion and the installation of products and processes in juxtaposition. The classification of exhibits was based upon this plan. The machine through whose operations raw material is converted into use and the processes employed in utilizing natural products, as well as the articles manufactured, will be exhibited so that not only will the fund of human information be greatly increased, but suggestion will be made to students, scientists and inventors that may give still greater development to genius and ingenuity in the following than may have been reached in the preceding decade.

Education will be the keynote of the Universal Exposition of 1904. It is designed to teach all-but primarily and distinctly, as previously stated, the expert working citizenship of the country and the world in all lines of human activities. Each department of the world's labor and development is to be presented at St. Louis, classified and installed in such manner that all engaged in or interested in such branch of activity may come and see, examine, study, and go away advised. Each of the separate sections of the Exposition will be an equivalent of, or rather will be in actually a comprehensive and most effective lesson in the line of industrial and social achievement and progress which it has been organized to present.

In conjunction with the majority of the sixteen main departments of exhibits indicated in the exposition classification, committees from the Board of Directors had already been selected, as recorded, for the purpose of general promotion and supervision. Active organization was now necessary. In the first place,

for each of the sixteen departments an expert, or chief, under whose personal direction its operations were to be immediately conducted and its exhibits assembled, was required. The utmost care was necessary and was exercised in the selection of these experts whose duties were arduous and responsibilities great; as well as in later naming their aides and effecting the detail organization of the respective departments. Always with strict regard for economy and efficiency, this work now promptly proceeded.

The experience and executive capacity of the director of exhibits was of signal value, economically and otherwise, in this connection. A better selection for head of the Division of Exhibits could not have been made. The reputation of F. J. V. Skiff as an exposition authority and executive of the highest order is universal and is generally acknowledged. His exposition experience is indeed unique, extraordinary and comprehensive. In actual service it has extended over a period of fifteen years or more and into all phases of exposition work. As commissioner of immigration and statistics for Colorado he prepared exhibits of the resources of that state at the Chicago Exposition of 1889, and the St. Louis Exposition of 1890. In the latter year President Harrison appointed him a member of the National Commission to the World's Columbian Exposition of Chicago, of 1893, and he was elected chairman of the committee on mines and mining of that commission. Soon after, he was made a member of the Colorado State Board of Columbian Fair Managers, and later was appointed chief of the department of Mines and Mining by the management of the Exposition; in accepting which place he resigned the other two offices mentioned. He served through the Columbian Exposition, being appointed director-general, ad interim, soon after its opening. He organized the jury of awards at the Nashville (Tennessee) Exposition and became a member of that body. He was selected as director-in-chief of exhibits for the United States Commission to the Paris Exposition of 1900, and also as one of the commissioners to the exposition at Turin, Italy, in 1901. In recognition of his services at Paris, he was decorated by the French Government as an officer of the Legion of Honor; at the Columbian Exposition he received a bronze medal from France and a gold medal from Germany. He is a member of the American Institute of Mining Engineers, the International Museums Association of England, the National Geographical Society, and the American Association for the Advancement of Science. As executive director of the Field Museum of Chicago, which institution he was selected to organize, equip and install, at the close of the Columbian Exposition, he has kept in close touch with the scientific progress of the world, to which he has materially contributed.

The inauguration of the respective exhibit departments was carefully timed and regulated, according to the nature of the task to be performed by each. Chiefs for their control were appointed as the progress of the work of the Division of Exhibits demanded, and upon the recommendation of Director Skiff, under whom they served. Only such aid, in leading and minor capacity, as was absolutely necessary was employed in the division. Combinations of departments under one chief were effected where practicable; and the vitalization of a number of departments was deferred until well along toward the open period of the Exposition. In the organization of this division, to quote the report of Director Skiff:

Careful attention was given to secure efficiency of personnel. Special proficiency in every class of service required was demanded throughout all departments and sections. Economy, capacity, and solidarity of organization were the objects sought. In order that the work of the division might be thoroughly done, with the smallest outlay of time and money.

The effect of this careful selection was apparent in the character of the staff assembled to execute the work of the Division of Exhibits. As gradually appointed and as finally completed, this organization was the most representative, and in every way the most capable ever assembled for exposition purposes. As truly stated, the work of creating and assembling expositions is no longer experimental; it has become a profession; it is a service that has developed experts. Chicago and Paris had been training schools from which had graduated capable specialists in every line of exposition work. From such were chosen the men whose duty it would be to collect and install the exhibits of the St. Louis Universal Exposition of 1904.

Each member of the exhibits staff was distinguished either by a record of previous extensive and successful performance in exposition work, or by an eminent degree of fitness for the task to execute which he was selected.

The chief of the department of Art was the first to be named- Prof. Halsey C. Ives, of St. Louis, was appointed to that position on August 5, 1901. Professor Ives needed neither introduction nor reference to his eminent fitness. He was well known in art circles everywhere; his position, indeed, in the art world, as a supervisor and collector of art objects and exhibitions, was second to none. Besides having studied art in the principal cities of this country and Europe, his numerous visits to art centers at home and abroad had made him familiar with the works in the great public and private collections of the world. Through his instrumentality, the St. Louis School of Fine Arts was established, and he was made its director, in which capacity he had continued. He was a prominent member of or had close affiliation with all prominent art bodies of the United States and Europe; and for many years had been in close touch with leading artists and art officials of all countries. He was chief of the department of Art of the Columbian Exposition of 1893 and contributed materially to the collection of the art exhibit of the United States at the Paris Exposition of 1900. For his services to art he had, previous to the time of his appointment, been commended by decorations and otherwise by the French government, by the Emperors of Germany and Japan, and by the Kings of Sweden and Denmark.

Dr. David T. Day, of Washington, D.C., was made chief of the department of Mines and Metallurgy, August 9, 1901. Pressure of other duties, however, prevented him from permanently assuming the responsibilities of this important position. Upon his resignation, on March 31, 1902, he was succeeded by Dr. J. A. Holmes, also of Washington, D. C., Dr. Day continuing as honorary chief of the department. The position of Dr. Holmes as a geological authority and investigator is distinguished, and his exposition experience had been practical and extensive. He was for a decade professor of geology and mineralogy in the University of North Carolina and state geologist of North Carolina. His services in connection with state and government surveys had brought him into contact with the mineral resources of practically every state and territory of the Union. His exposition experience included the installation and superintendence of mining exhibits at the New Orleans, Chicago and Atlanta Expositions. He also had served as juror at the Atlanta, Nashville, Omaha, Buffalo and Charleston Expositions. He is a member of the American institute of Mining Engineers, the American Geological Society, the American Association for the Advancement of Science.

Howard J. Rogers, of Albany, NY, was appointed chief of the department of Education, on September 15, 1901, and later, June 1, 1902, chief of the department of Social Economy. Mr. Rogers' standing in the educational world and his services in the cause of education are well known. For many years he was connected in an important capacity with the department of education of the State of New York. He was superintendent of the New York State educational exhibit at the World's Columbian Exposition, Chicago, 1893; and director of the departments of Education and Social Economy for the United States Commission to the Paris Exposition of 1900. For his services at this exposition, he was made Chevalier of the Legion of Honor by the French government.

On November 1, 1901, Frederic W. Taylor, of Lincoln, NE, was appointed chief of the department of Agriculture. Later he was also made chief of the department of Horticulture. Mr. Taylor had long been identified with agricultural progress and interests in this country. He was professor of horticulture in the University of Nebraska, superintendent of the Nebraska State horticultural exhibit at the World's Columbian Exposition; superintendent of Agriculture, Horticulture and Forestry at the Trans-Mississippi Exposition, Omaha, 1898; and superintendent of Horticulture, Forestry and Foods, as well as director of concessions at the Pan-American Exposition, Buffalo, 1901.

Dr. Tarleton H. Bean, of New York, was appointed chief of the department of Fish and Game on January 1, 1902, serving also later as the chief of the department of Forestry. Dr. Bean was well known as one of the leading experts on fish and fisheries of the world. He served with the United States Commissioner of Fish and Fisheries from 1874 to 1895; was curator of the department of Fishes in the United States National Museum; was representative of the United States Fish Commission at World's Columbian Exposition, and at the Atlanta Exposition in 1894; was director of New York City aquarium which famous establishment he rebuilt; and was director of Forestry and Fisheries for the United States Commission to the Paris Exposition of 1900, being decorated as Chevalier of the Legion of Honor by the French government for his services at that exposition.

Milan H. Hulbert, of New York, was appointed chief of the department of Manufactures on January 15, 1902. Mr. Hulbert had served as superintendent of exhibits at the World's Columbian Exposition, also at the Omaha and other expositions. He was director of the department of Varied industries for the United States Commission to the Paris Exposition of 1900, where he was decorated by the French Government as Chevalier of the Legion of Honor.

John A. Ockerson, of St. Louis, was appointed chief of the department of Liberal Arts, January 15, 1902. Mr. Ockerson is an engineering authority of international standing and has been for many years an engineer and member of the Mississippi River Commission. He is a member of prominent engineering bodies of the world. He served as a member of the international jury of awards at the Paris Exposition of 1900; he was also a United States delegate to the international Congress of Merchant Marine and to the international Congress of Navigation held at that exposition. For his services in these connections, he was decorated by the French Government with the order of Chevalier of the Legion of Honor.

Professor W. E. Goldsborough, of Lafayette, IN was made chief of the department of Electricity on January 20, 1902. Prof. Goldsborough is a graduate

mechanical and electrical engineer, of Cornell University. He was professor of electrical engineering in Arkansas and Purdue Universities. He had been associated with various expositions in capacity as an electrical and engineering expert, was a member of the international Electrical Congress at the Chicago Exposition, also a delegate to the Omaha and Buffalo Expositions, and a delegate of the American institute of Electrical Engineers to the Paris Exposition of 1900. He is a member of the board of managers of the American institute of Electrical Engineers, a member of the institution of Electrical Engineers of England, and of the Franklin institute.

Thomas M. Moore, of New York, was appointed chief of the department of Machinery, February 3, 1902. Mr. Moore had previously served as chief of the department of Machinery and Transportation exhibits and of the sections of Agricultural implement exhibits and exhibits of Ordnance and Graphic Arts at the Pan-American Exposition, Buffalo, 1901.

Willard A. Smith, of Chicago, was made chief of the department of Transportation, February 13, 1902. Mr. Smith is editor of the *Railway Review*, and a member of leading railway societies of the United States. He was chief of the department of Transportation exhibits at the World's Columbian Exposition, and director of the department of Transportation and Engineering for the United States Commission to the Paris Exposition of 1900. He was decorated by the French Government, Chevalier of the Legion of Honor, for his services at that exposition.

The organization of the departments of Anthropology, Physical Culture and Live Stock was not effected until during the year 1903.

The active work of the department of Live Stock was inaugurated on January 1, 1903, F. D. Coburn, of Topeka, Kansas, being made chief on that date. Mr. Coburn served until June 1, 1904, when, resigning on account of ill health, he was succeeded by Col. Charles F. Mills, of Springfield, IL, originally secretary of the department.

The standing of Messrs. Coburn and Mills in the livestock world is generally known. In addition to being secretary of the board of agriculture of the State of Kansas, Mr. Coburn has for many years been a regent or president of the board of regents of the Kansas State Agricultural College. He is a principal authority on livestock subjects and a regular and valued contributor of such literature to live stock and other journals, encyclopedias and textbooks. His experience in organizing and conducting livestock shows has been most thorough, practical, and extensive. Col. Mills has long been one of the primal forces behind the extraordinary development of the livestock industry of this country. For years he was secretary of agriculture for the State of Illinois. For more than thirty years he has conducted or otherwise participated in leading livestock shows; he was one of the organizers and secretary of the celebrated American Fat Stock Show, at Chicago. He was in active charge of the livestock exhibit at the World's Columbian Exposition of 1893 and has a record of several decades as secretary of the Illinois state fair, at Springfield. Colonel Mills is the editor and proprietor of a prominent journal devoted to live stock and other farming interests. His connection with livestock associations is active and extensive, and his acquaintance among American livestock breeders and owners is perhaps wider than that of any other man.

The department of Anthropology was organized and Dr. WJ McGee, of Washington, D.C., selected as chief on August 1, 1903. Dr. McGee, in addition to being a geologist of eminent note and achievement, is recognized as one of the leading archaeologists and anthropologists of the United States. From 1893 to 1903 he was ethnologist in charge of the Government Bureau of American Ethnology at Washington, D.C., which position he resigned upon taking up his work with the Exposition. Dr McGee is president of the American Anthropological Association and is an officer of many other scientific societies. He is author of a number of important scientific works and is a leading contributor to scientific journals and encyclopedias, being associate editor of the *American Anthropologist*.

The department of Physical Culture was also organized on August 1, 1903. James E. Sullivan, of New York, was appointed chief of this department on that date. Mr. Sullivan is, undoubtedly, one of the leading figures in athletics in America, which practically means in the world. For twenty years he has been active and prominent in athletic affairs, having been secretary of the Amateur Athletic Union of the United States, during the greater part of that time. He was director of Athletics at the Pan-American Exposition. Under A. G. Spaulding, he also had charge of the American participation in athletics at the Paris Exposition of 1900, where Americans under his direction, won in practically all of the events of the Olympic Games of that year.

A distinguished member of the staff of the Division of Exhibits was Dr. Selim H. Peabody, of Chicago, who was appointed assistant to the director of exhibits on August 1, 1902. In addition to being a prominent scientist and a renowned teacher, Dr. Peabody was an exposition authority of high rank and extensive experience. For a number of years, he was president of the University of Illinois. At the Chicago Exposition he was chief of the department of Liberal Arts. He had served further in important official capacity with the Paris, Pan-American and Charleston Expositions. Dr. Peabody discharged the duties of his responsible post until May 1903, when his death inflicted a severe loss upon the Exposition and the world. He was succeeded by Edmund S. Hoch, also of Chicago, who continued in the office until the close of the affairs of the division. Mr. Hoch came to the exposition service well-schooled in experience and practice. He had effectively served in connection with the recent Nashville and Paris Expositions, having contributed materially to the official report made to Congress of the latter exposition.

In several cases where it was deemed necessary on account of the extensive scope or peculiarly difficult nature of the work, assistants to chiefs of departments were appointed. In the department of Art, Charles M. Kurtz was named assistant chief, on August 12, 1901. In addition to being an art critic of prominence and the director of various special art exhibitions, Mr. Kurtz had served as assistant chief of the department of Art at the World's Columbian Exposition of 1893. He had also contributed materially to the success of the art exhibits of the Omaha and Paris Expositions.

In the department of Transportation, Commander Asher C. Baker was made assistant chief, on April 21, 1902. Mr. Baker, in addition to being an officer of the United States Navy, had served as assistant chief of the department of Transportation at both the Chicago and Paris Expositions.

Victor C. Heikes was made assistant chief of the department of Mines and Metallurgy, April 1, 1903. Mr. Heikes had also served in connection with the Chicago and Paris Expositions, in the preparation of the exhibits of mines and metallurgy.

On August 1, 1903, S. M. McCowan, of Chillocco, IT, was appointed assistant chief of the department of Anthropology. Mr. McCowan is recognized as one of the authorities on Indian education in this country and had been for a number of years successful superintendent of the famous Indian School of Chillocco.

To facilitate the work of the Division of Exhibits a special draughting room was established in connection with the office of the director of exhibits for the preparation of the numerous floor plans and installation plans required in negotiations with exhibitors and the installation of exhibits. Edward C. Jorgensen was made chief draughtsman, in charge of this work on April 1, 1902. He served until his death, in August of the same year, when he was succeeded by L. B. Pendleton, who was later made architect for the division.

In order to expedite negotiations with the large number of important manufacturing interests in the East, a supplementary office of the Division of Exhibits was opened in New York in January 1903, with John H. McGibbons, as "eastern representative of the Division of Exhibits," in charge. This office was continued only during the preparatory period, being closed directly after the opening of the Exposition.

Profiting by the experience of previous expositions, at all of which such great confusion prevailed during installation and deinstallation periods, a special organization was effected by the Division of Exhibits to avoid, as much as possible, such confusion at St. Louis. The principal duty of this organization, designated the "bureau of expedition," was to effect, or promote, the orderly and prompt introduction, distribution, and withdrawal of exhibits. T. L. Johnson was appointed superintendent of this bureau, on November 1, 1903, being succeeded, upon his resignation, by J. Staley Teager, on March 18, 1904.

One of the most important functions and duties of the exposition administration was the organization of the international Jury of Awards, which would formally review the exhibits of the Exposition. To facilitate the work of selecting the members of the jury and the conduct of its proceedings, a special section of the Division of Exhibits relating to awards was organized. John H. McGibbons was chosen to direct this work and assumed charge of it, upon the conclusion of his duties as eastern representative of the division, on June 1, 1904, with the title of secretary of awards for the Division of Exhibits.

In addition to the sixteen principal departments of the Division of Exhibits, a number of special and correlated or co-operative sections were established.

The recommendation submitted by Director of Exhibits Skiff and enthusiastically endorsed by the leading minds of the world for the institution of a series of national and world's congresses, to be held as an "academic accompaniment" of the Exposition, was welcomed by the Board of Directors of the Exposition

Company. The great significance and uplifting character of such a movement, involving as it would a practical congregation of the wisdom of the world, was promptly realized and the project was gladly adopted and incorporated in the regular Exposition program. It was assured fullest support, which was later materially represented by an appropriation of \$200,000 to defray all necessary expenses in connection with the congresses, including transportation of distinguished participating delegates from all parts of the world. In November 1902, a standing Committee on international Congresses was created from the Board of Directors of the Exposition; and an administrative board, with powers of general supervision in relation to the organization and convocation of the congresses was later appointed, its membership selected from among the leading educators of the country. At the same time Howard J. Rogers, chief of the departments of Education and Social Economy was appointed director of congresses. The standing Committee of the Board of Directors on international Congresses was composed of F. W. Lehmann, chairman; Charles W. Knapp, Breckinridge Jones, Joho Schroers and A. L. Shapleigh.

Another important section, the introduction of which into the exposition scheme was authorized by the Board of Directors, was that of Aeronautics. The exposition management felt that the time was ripe to make a signal effort in the direction of stimulating development in aerial navigation and particularly to definitely demonstrate, for the information of the world, what progress had been made in this direction, and, if possible, what the immediate future might promise. The early recommendation of Director of Exhibits Skiff that such action be taken and that a series of substantial prizes be offered for an international aerial tournament, such as would draw the attention of the world and induce active competition, was promptly adopted. An appropriation of \$200,000 was made to cover the expenditures of the proposed tournament and an extraordinary amount offered in prizes, the sum of \$100,000 being set aside for a main prize. A committee made up of members of the Board of Directors was organized to supervise the affairs of the section, the conduct of which was placed under the direction of Willard A. Smith, the chief of the department of Transportation Exhibits. The committee of the Board of Directors was composed of Charles W. Knapp and Nathan Frank. Rules governing the competition were drawn up, approved by experts and the Exposition management and widely distributed. An international committee of experts were chosen to give counsel and aid in all important decisions, proceedings, and operations.

The subject of music for the Exposition was of first importance and received special attention. It was unanimously decided to make the musical offering of the Exposition the most extensive and distinguished that had ever been placed before the public. A large appropriation was early agreed upon for musical features, which was later made in amount \$425,000. The administration of affairs pertaining to the musical attractions and program to be presented was placed under the supervision of Director of Exhibits Skiff. A bureau of music was established in May 1902, of which George D. Markham, of St. Louis, a member of the Board of Directors, was appointed chief. Later, in November 1902, a working organization of this bureau was effected by the appointment of George W. Stewart, of Boston, as manager, and Ernest Kroeger, of St. Louis, master of programs. At that time active procedure and negotiations were inaugurated.

Immediately following upon its organization, active work was begun by each department and section of the Division of Exhibits in the field indicated by its character. Early interest and activity naturally centered about the sixteen great exhibit departments. Through the plans and efforts of these departments were to be brought to St. Louis and arranged in the exhibit palaces the brilliant treasures of the world. A great exposition, representing all of the infinite activities of mankind, was to be selected, assembled and installed within the space of a comparatively few months—a task that even a cursory review of the vast array of exhibits at minor expositions revealed to be colossal. The area provided for exhibits at the Universal Exposition of 1904 exceeded by more than half that supplied at any previous exposition, national or international. To properly fill this space with exhibits representative of the condition, progress, and achievement of all the nations of the earth, within the time available, required knowledge, skill and ability of the highest order, and the most industrious and persevering application of all forces and means at command or that might be devised.

The task ahead of the Division of Exhibits was indeed mighty and complex; but the chiefs in charge were confident and capable, and under the able guidance of the director of exhibits they applied themselves assiduously and systematically to the great campaign.

Exploitation was, of course, the first agency to be employed. The world must be advised of the Exposition, of its extent, importance, and universal character. The special world which provides exhibits must be particularly and specifically advised and impressed—must be made to fully understand and appreciate the extraordinary and magnificent scale upon which the Exposition was being built and was to be perfected and conducted—its attractions and drawing power and advantages offered to exhibitors. This important preliminary work was inaugurated and carried on with great energy from the beginning. To quote from the report of Director of Exhibits Skiff:

Beginning with the active operations of the department of the division first inaugurated, a campaign of exploitation was begun which became more active upon the addition of each new department and section vitalized. Prompt and effective steps were taken to interest all of the agencies of progress, scientific and industrial in the Exposition. Through trade journals, the general press and conventions, by special literature and personal visitation, the important educators, producers and manufacturers of the world were apprised of the Exposition and impressed with its scope, extent and personality. The offerings which the Exposition made in the way of ample and desirable exhibit space, as indicated by the floor plans of the buildings in course of erection upon the exposition grounds were fully and effectually shown. These floor plats, which were taken from the original construction plans of the buildings as soon as they were available, were carefully analyzed by draughtsmen of the Division of Exhibits and their essential details accurately and fully presented for the information of prospective exhibitors. The eastern office of the division, with headquarters in New York, was effectively availed of in connection with this work of exploitation, which was carried on with increasing vigor up to within a few months of the opening of the Exposition.

In this direction the energies and operations of the Division of Exhibits ably supplemented and were in turn augmented by the progressing campaign of the Division of Exploitation under the able direction and diligent guidance of Secretary Walter B. Stevens. Early negotiations in foreign countries, with gov-

ernmental officials and individual interests, were principally conducted through and facilitated by foreign representatives of the Exposition operating under the direction of the Division of Exploitation, and with the splendid co-operation of the Department of State. The preliminary work which the Division of Exploitation was steadily carrying on at home also proved of substantial aid. While these general efforts reached the universal public those of the Division of Exhibits were addressed specifically to the interests concerned in making exhibits; and they were eminently effective. Indeed, so thorough was the work of preliminary exploitation conducted by the division through its various departments and the office of Director Skiff, that it may be said to have materially contributed to form the solid groundwork upon which the general popular exploitation of the Exposition was later carried to success.

The direct results to the Division of Exhibits of this vigorous and efficient exploitation was soon made apparent in the number of inquiries concerning exhibit space and conditions received by the various departments from all parts of the United States and the world.

An encouraging feature of this situation was that a representative exhibit by the United States Government was assured, also an elaborate exhibit of the Philippine islands, and an exhibit from Porto Rico.

CHAPTER IV

EXPLOITATION CEREMONIES

The Organization of the Department—Entertainment of the Pan-American Delegates—Driving the First Stake—The Breaking of Ground - Congratulatory Speeches—Auspicious Events in the Early Pre-Exposition Period

UNDER the by-laws of the Exposition a standing committee was created, “to arrange for all public demonstrations which may be deemed appropriate at any stage of the enterprise and particularly to devise a plan for the dedicatory exercises.”

At the head of this committee, in recognition of its importance, was placed the First Vice-President of the Exposition, Corwin H. Spencer. The other members of the committee were William H. Lee, vice-chairman; James G. Butler, Cyrus P. Walbridge, L. D. Dozier, Franklin Ferriss, J. C. Van Blarcom, George J. Tansey. The committee held its first meeting on the 31st day of July 1901, at which arrangements were made to have the Exposition properly represented at a meeting of World's Fair Commissioners in Little Rock, and at the Quarto-Centennial Celebration of Colorado in Colorado Springs.

The committee continued in active and direct charge of all ceremonies both during the pre-exposition and exposition periods. Its final work was the arrangement and successful carrying out of the program for Francis Day, December 1, 1904, the closing day of the Exposition. The members of the Committee on Ceremonies gave freely of their time to the exacting duties. That the service was performed with extraordinary judgment and tact was evidenced by the many impressive ceremonies, conducted in strict accordance with the prearranged program and to the satisfaction of all participating in them.

In December 1902, Colonel E. C. Culp, of Kansas, who had filled a similar position with ability at the World's Columbian Exposition, was appointed secretary to the Committee on Ceremonies. Although in failing health Colonel Culp continued to discharge the duties of the office until May 1904, when his death occurred. He was succeeded by Allen V. Cockrell, who had been the Exposition's efficient representative at Washington during the pre-exposition period. Mr. Cockrell continued with the committee to the end of the Exposition. In April 1904, Lieutenant Sidney C. Haight, USA, was detailed by the War Department for duty at the Exposition. He was put in charge of the encampments, and of military features of ceremonies. He performed these duties very acceptably until October, when he was assigned elsewhere. In April 1904, Brigadier-General Edmund Rice, U.S.A. (retired), was appointed master of ceremonies. General Rice had held the position of commandant of the Columbian Guard at the World's

Fair of 1893. His service ended at St. Louis with the close of the Exposition. In no small degree the perfection of details attained in the ceremonies of the exposition period was due to the intelligent devotion to duty manifested by General Rice.

In October 1901, two years and six months before the opening of the Exposition, occurred the first of the long series of notable ceremonies conducted by this committee. It was the visit of the delegates en route to the Pan American Congress in the City of Mexico. These delegates came by special train. They included distinguished diplomatic representatives of Central and South American countries as well as the representatives appointed by the United States to the Congress. On the invitation of the Exposition, the special train was stopped a day in St. Louis. The program as arranged by the Committee on Ceremonies began with a drive through the city and receptions by the Merchants Exchange and by the Latin-American Club. Then followed a drive through Forest Park and the World's Fair Site. At the Country Club luncheon was served. The visitors were escorted by the entire Committee on Ceremonies assisted by other officers and Directors of the Exposition. The good fruits of this function were realized in the hearty expressions of satisfaction offered by the visitors, and later by strong endorsement given to the Exposition by the Pan-American Congress. A notable step toward participation by the countries of the American hemisphere was taken on that crisp October day.

Driving the First Stake:

"This stake represents the architectural center of the entire grounds that are going to be laid out to develop this fair," were the words of Chief Architect Isaac S. Taylor, uttered when the ceremonial stake was driven at 12:00 o'clock, noon, September 3, 1901.

The stake was driven at a point 300 feet southwest of Sculpture Hall. Continuing, Mr. Taylor said: "From it is to be established the line of every avenue, of every cascade, and of every waterfall that has been designed upon what we call the 'layout plan.' On the line of these avenues will be placed the main buildings and I am sure that if the Lord continues my present health and I have the sustaining power of the gentlemen before me, I shall turn over to you the grandest, most magnificent exposition in the way of buildings, architectural effects and landscape gardening that the world has ever seen."

It had been arranged to commence the ceremony at eleven o'clock. When the hour arrived over 2,000 people were on the ground, but the President's party failed to put in an appearance. At that time the geography and topography of Forest Park were not so familiar to the World's Fair Directors as they afterward became. R. H. Phillips, chief civil engineer, started out to ascertain the cause of the delay. He soon found the official party wandering in what was known as the wilderness. It had missed the way and was glad to follow the flag of the engineer to the point whence the main lines radiated. Here under the forest trees, protected from the hot rays of the noonday sun, President Francis called the interested company to order and addressed it as follows:

Directors of the Louisiana Purchase Exposition and friends - We have met in an informal manner and without notice to take the first step in the physical work of the

great undertaking which was inaugurated in the city three years ago. The stake which will now be driven will mark an epoch, not only in the history of this enterprise, but in the history of the Mississippi Valley and of our entire country. We are now entering upon a work which will not only broaden and elevate this country, but whose beneficent influence will be felt from the Atlantic to the Pacific, from the lakes to the gulf. The first stake will now be driven by our chairman on Grounds and Buildings, a man who has from the beginning of this work borne a laboring oar, and who has done more than any other one man toward raising the money requisite for carrying to successful completion the Louisiana Purchase Exposition. Mr. Thompson, you will drive the stake.

The stake was hewn out of a stout, young oak which grew upon the World's Fair grounds. It was about two feet long and about two inches square, polished and varnished. President Francis placed the stake at the exact point indicated by the surveyors and Mr. Thompson, with a new ax, drove it firmly into the ground.

In order that all of the Directors present might participate in the ceremony, a silver nail had been provided, which was driven into the head of the stake, each of the Directors present striking the nail a tap with a new hatchet. The nail bore the inscription: "W. H. T., September 3, 1901, La. Pur. Exposition." The stake, nail, ax and hatchet have been preserved among the souvenirs of the Exposition.

The Committee on Ceremonies was represented by Hon. Cyrus P. Walbridge, who was next introduced and spoke as follows:

Four months ago, the World's Fair was in embryo, in the hands of a volunteer committee of promotion. In that short time a great corporation has been formed; with capital of \$15,000,000. Its various departments have been organized, a site has been selected amid the keenest competition of numerous eligible sites; the general Plan and Scope have been made and approved; and now we have to drive the first stake in the practical work of constructing the Exposition. Can you cite an instance where similar work has not required double that time? This is not a time, perhaps, to praise individuals, but it is only fitting that this stake should be driven by one who has been the hitching-post of the movement from the time of his connection with it. I do not detract from the masterly work of President Francis and other men when I say, had it not been for the steady hand, the iron will, and the quick perception of Mr. Thompson, this stake would never have been driven.

Enjoining his fellow-Directors to share in the work and stand united so that they might deliver "the work in its splendid completeness on the day appointed," Mr. Walbridge closed his remarks. President Francis again spoke endorsing what the retiring speaker had said and urged every "man, woman and child in the community to put shoulders to the wheel and to work earnestly and in harmony for the success of the great undertaking."

It was a beautiful day and the enthusiastic crowd dispersed in full harmony with the spirit of those who were active in the ceremony of Driving the Stake. Many of the participants took lunch at The Cottage where Mr. Walbridge again spoke and took occasion to pay a high compliment to the local press for the great interest it was taking in the Exposition.

The Breaking of Ground:

December 2, 1901, Governor Dockery, of Missouri, issued a proclamation designating December 20 of that year as Louisiana Purchase Flag Day and calling upon the citizens of the state to display the national colors with appropriate

ceremony in commemoration of the acquisition of the territory which he happily declared has made "our Republic the greatest power among the nations of the earth."

December 20, 1901 was the ninety-eighth anniversary of the formal transfer of the Louisiana Territory of the United States. As this interesting fact became generally known other governors took up the idea and Louisiana Purchase Flag Day was popularly celebrated throughout the Purchase.

This anniversary was observed in St. Louis by "breaking ground" on the exposition site. Up to this time the work had been formative and intangible- now the exposition management was entering upon a period in which its work would take form and become tangible. This initial ceremony, practical and picturesque, appealed to the public. In comparison with plans and technical designs it was something all could understand. Its exploitation value was at once recognized and an elaborate program worthy of the occasion was prepared and given to the press.

Of course, the directors, general officers of the Exposition and heads of departments occupied prominent places in the program. General John C. Bates, U. S. Army, Commander of the Northern Division, was grand marshal and the First Vice-President, Corwin H. Spencer, who was also chairman of the Committee on Ceremonies, was selected for President of the Day. Beside extensive military features the civic societies and municipal departments of St. Louis were to participate in the parade; provision was made for several bands of music and there was to be an artillery salute of sixty guns. A second division of the parade was to be made up of commercial organizations in the city. The governors of all of the states in the Purchase and many public men throughout the country were invited as guests of the Exposition Company.

Beside being one of the shortest days in the year, December 20, 1901, proved to be one of the coldest. The temperature was ten degrees below zero and snow lay five inches deep in the park. The parade necessarily was abandoned. The invitation to the public to witness the ground-breaking ceremonies was withdrawn. It was determined that the Directors would meet at the St. Louis Club at 1:00 o'clock and after luncheon take carriages for the site; after breaking ground, the party would repair to the Coliseum where the public was invited to hear the addresses and witness the program. This modified arrangement was carried out.

Ground was broken at a point not far from where the Saint Louis equestrian monument was placed during the World's Fair. A large log heap had been burned to thaw the ground. A four-horse dump-wagon to which had been hitched matched gray teams was in readiness. Three shovels were specially provided for the occasion. One of these shovels was the present of Director A. L. Shapleigh. It was a heavy D-handled, diamond-edge tool with ebony handle fitted into a beautifully curved socket, all the steel being silverplated.

President Francis broke the first shovelful of ground with the Shapleigh shovel which is still in possession of the Exposition Company preserved as a souvenir.

Director J. E. Smith, vice-president of the Simmons Hardware Company, conceived the idea of procuring an 1803 shovel to be used on this historic and interesting occasion. Accordingly, he opened correspondence with shovel-making establishments in the East and finally found the implement he wanted in the

Massachusetts State Arsenal at Boston. He obtained the loan of this valued relic and brought it to St. Louis for use on the anniversary Purchase Day.

The President broke the second shovelful of ground with the 1803 shovel. A facsimile of this shovel is also in possession of the Exposition Company.

More than one hundred and fifty years ago French lead miners opened veins of galena in southeast Missouri. In one of these mines was found what is known as the La Motte shovel. It is probably nearly two hundred years old. This ancient tool with its long-curved handle and rusted blade shaped not unlike the primitive scoop was loaned for the ground-breaking ceremonies by Director Pierre Chouteau.

President Francis and others used the La Motte shovel in the ground breaking exercises. These simple tools were in strange contrast to the powerful traction excavators, the steam shovels and twenty-horse plows with long trains of dump-wagons which in a few months were to move a million cubic yards of earth and bring the site to building levels.

Despite the cold weather a large crowd gathered to witness the novel proceedings. The chairman of the Committee on Ceremonies opened the exercises with a short speech in which he deplored the inclement weather and closed with the remark: "But far from feeling any sense of depression we see the promise and the hope of the future as distinctly as we, at this moment, see the brilliant and benignant sun casting approving and encouraging rays upon the scene."

President Francis followed in a short address. He too, deplored the inclement weather and said: "Nothing on earth or under the earth can prevent the Louisiana Purchase Exposition Company from carrying out its program. We would be unworthy descendants of those heroic ancestors of ours who, ninety-eight years ago today, broke ground upon the west bank of the Father of Waters for the establishment of a constitutional government, if we were deterred from our purpose by even lower than zero weather." The President then announced the ensuing meeting in the Coliseum and invited the public to attend and hear the oration of a distinguished citizen of the Louisiana Purchase, Hon. James A. Tawney, of Minnesota. Mr. Tawney was an interested spectator of the ground-breaking ceremony.

Rev. Dr. S. J. Niccolls invoked divine guidance and blessing upon the work of the Exposition.

After the prayer, the President broke the first shovelful of ground and threw the dirt into the wagon. After he had initiated the ceremony, he was followed by other exposition officials in the following order: Treasurer Wm. H. Thompson, Secretary W. B. Stevens, Director of Exhibits F. J. V. Skiff, Director of Works Isaac S. Taylor, Director of Concessions and Admissions Norris B. Gregg, the chiefs of the departments, the Vice-Presidents, the Directors, representatives of the National and state commissions, governors of states, and members of Congress. Among the distinguished men who were present and participated were General John C. Bates, Mayor Rolla Wells of St. Louis, Hon. Norman J. Colman, Mayor Stephens, of East St. Louis. All of the time the cameras and biographs were busy with the changing scenes. Finally, with a round of cheers, the official party took their carriages and drove to the Coliseum.

As the official party passed the Armory a battalion of 300 men of Colonel Sinclair's First Regiment, N. G. M., under Major L. M. Rumsey, Jr., turned out to escort it to its destination. President Francis, in a short speech, announced the music number and then introduced Hon. James A. Tawney, chairman of the Committee on Industrial Arts and Expositions, House of Representatives, as the orator of the occasion. In his introduction President Francis gave great credit to the Minnesota congressman for his wise management of the exposition appropriation bill.

Mr. Tawney's speech was a masterpiece in exposition literature. It went into the history of the Purchase, gave an exhaustive review of its industrial development and in the most optimistic spirit forecasted its future.

Mr. Tawney was followed by Governor Jefferson Davis of Arkansas in a short impromptu address, after which the meeting was adjourned with a prayer offered by Rev. Dr. Niccolls.

In the evening a dinner was given by the exposition management at the Southern hotel. The speakers at the banquet were President Francis, Harlow N. Higginbotham, Colonel John D. G. Oglesby, representing the governor of Illinois, Hon. John M. Allen, of the National Commission, Hon. F. M. Eddy, of Minnesota, Governor Savage, of Nebraska, Governor Dockery, of Missouri, Governor Van Sant of Minnesota, Hon. Dudley Goodall Wooten of Texas, General Eli Torrence of Minnesota and G. W. Wattles, who was president of the Trans-Mississippi Exposition at Omaha.

It was at this dinner that Harlow N. Higginbotham, president of the Columbian Exposition, made the famous announcement that the Chicago Drainage Canal had been dammed in two places, Joliet and St. Louis. The dam at Joliet was for generating power and he thought the one at St. Louis served no good purpose and ought to be abolished.

Many telegrams of congratulation were received and read at the banquet by Secretary Walter B. Stevens. The far-reaching and effective influence of this ground-breaking ceremony was realized by those who afterward went into the fields of domestic exploitation and came in contact at different state capitals with those who delighted to tell of their royal welcome at St. Louis.

CHAPTER V

FOREIGN AND DOMESTIC EXPLOITATION

The Methods of Procedure—Secretary Hay's Note—Co-operation of Diplomatic and Consular Representatives—Commissioners of the Exposition—Forty-four States and Six Territories Represented—Sixty-two Nations and Colonies Participate.

TO active and well directed efforts by committees of the Board of Directors the efficiency of the Division of Exploitation was in no small degree due. These standing committees were composed of directors possessing more than general qualifications for the supervision exercised by them.

Foreign exploitation was carried on under the supervision of a standing committee composed of Adolphus Busch, chairman; Wilbur F. Boyle, vice chairman; W. T. Haarstick, J. C. Van Blarcom, John D. Davis, Dan. C. Nugent. The secretary of the committee was Russell Stanhope.

The department of domestic exploitation was organized under joint action of the Committees on Legislation and State and Territorial Exhibits. The Committee on Legislation was composed of Daniel M. Houser, chairman; William C. Steigers, vice-chairman; Nicholas M. Bell, James Campbell, Frederick G. Niedringhaus, Seth W. Cobb, George W. Parker. The Committee on State and Territorial Exhibits was composed of Charles H. Huttig, chairman; A. H. Frederick, vice-chairman; J. J. Schotten, Benjamin McKeen, F. E. Marshall, J. W. McDonald. The secretary was Charles M. Reeves, whose title on the organization of the department of domestic exploitation in November 1903, was changed to that of chief of the department.

Foreign Exploitation:

The details of foreign exploitation are set forth in the following excerpts from the report of the Division of Exploitation.

Diplomatic procedure commenced with a proclamation on August 20, 1901, by the President of the United States, William McKinley, inviting the nations of the earth to take part in commemorating at St. Louis the centennial of the purchase of the Louisiana Territory from France in 1803. Secretary of State John Hay issued a circular to the American diplomatic officers transmitting the proclamation therewith and directing that it be communicated to the governments to which they were accredited. The circular further expressed the sentiment of the President as follows:

"In communicating this invitation to the government to which you are accredited, you will express the pleasure which the President will feel should that government decide to accept it, by appointing commissioners and by further participating in the Exposition. It is not doubted that you will endeavor, as far as lies in your power, to promote

the interest of the Exposition by lending your assistance to its duly accredited agents who may present themselves to you."

This was followed by a note from the department of state to the diplomatic officers of foreign countries represented at Washington, notifying them that the American diplomatic officers accredited to their countries had been directed to communicate the President's invitation to their respective governments.

Two months later the President of the Louisiana Purchase Exposition, David R. Francis, addressed a communication to each and every nation of the western hemisphere, through their ministers of foreign relations, and to the governors of all the dependencies and colonies of foreign governments, notifying them that they would receive through the American department of state a formal invitation to take part in the Louisiana Purchase Exposition, and expressing the hope that their countries would accept. Following this Secretary of State Hay issued a circular to the American consular officers, appending a copy of a letter from President Francis, and strongly urging their heartiest co-operation and assistance.

On July 1, 1902, President Theodore Roosevelt signed a proclamation citing the Act of Congress providing for the Louisiana Purchase Exposition and the amendatory provision for a postponement of the opening date to 1904. Secretary of State Hay advised the American diplomatic and consular officers of this proclamation and directed them to communicate the same promptly to the governments to which they were accredited.

When the Division of Exploitation commenced its labors, it met with tardy encouragement in the foreign fields. Despite the activity of a corps of carefully selected commissioners, European nations were not at once responsive. A personal visit from the President of the Exposition, however, stimulated interest of those nations and convinced them of the importance of suitable participation in the Louisiana Purchase Exposition. In February 1903, President Francis reached London, where he met with a most cordial reception from King Edward, who gave emphatic assurances that Great Britain would be properly represented. The subsequent brief visits of President Francis to France, Spain, Germany and Belgium accomplished the desired results. At each capital the President of the Exposition was accorded a warm welcome and promise of participation.

In Asia there was apathy and financial stringency. Some prejudice against expositions in general was successfully overcome by the energetic and persistent representations of the Exposition's envoy to the Orient. Mexico was first among the nations to accept the invitation. The other Latin-American republics were slower to respond, but they eventually emulated the example so worthily set.

To the faithful and persevering labors or the following efficient agents abroad much credit was due for the splendid participation of foreign countries in the Louisiana Purchase Exposition:

Commissioner-General to Asia and Australasia.....	John Barrett
Commissioner to Europe.....	Thomas W. Cridler
Commissioner to Italy.....	Vittorio Zegglo
Commissioner to Argentine, Chill, Uruguay, Paraguay and Bolivia ..	Jose d'Olivares
Commissioner to Brazil and Portugal.....	John Taylor Lewis
Commissioner to Peru, Ecuador, Colombia and Venezuela	Ernest H. Wands
Commissioner to Cuba.....	Charles M. Pepper
Commissioner to Central American Countries	John Rice Chandler
Commissioner to Sweden, Norway and Denmark.....	Chas. W. Kohlsaat
Commissioner to South Africa, Australia and New Zealand	C. A. Green
Commissioner to Trinidad, Windward Islands	G. W. Fishback.
Commissioner to the Foreign Press	Walter Williams
Assistant Commissioner to the Foreign Press	Paul Oeker
Resident Representative in London	George F. Parker

Resident Representative in Paris, and Commissioner to India	Palmer L. Bowen
Resident Representative in Berlin.....	Joseph Brucker
Special Commissioner to European Countries	Florence Hayward
Special Commissioner to Oriental Countries	Theodore Hardee

Exploitation of the foreign field was accomplished at an aggregate cost of \$337,642.80, divided as follows:

Europe	\$143,612.31
Asia	61,338.04
Africa	3,656.84
South America	74,139.21
Central America.....	12,643.84
Australasia	4,462.20
Mexico, Cuba and West Indies	11,773.93
Expenses incidental to foreign exploitation	13,391.40
Office expenses of the director of exploitation.....	22,635.03
Total	\$337,642.80

That this amount was well spent is amply evidenced by the fact that it induced an expenditure on the part of foreign countries aggregating \$12,134,500, for displays of their arts, sciences, industries and products never before equaled in the history of expositions.

Domestic Exploitation:

Every state and territory in the United States with the exception of Delaware arranged for participation in the Exposition either through the appropriation of funds by legislative enactment or by popular subscription. Many of the states resorted to both methods. In addition to the states and territories within the United States proper, the District of Alaska, the Philippine islands, Puerto Rico and Hawaii provided for participation through official channels. All of these were worthily represented except Hawaii, where the appropriation made by the legislature was rendered invalid by a decision of the Supreme Court. The legislature of South Carolina made a preliminary appropriation, but the state failed to complete the plans through complications which arose in the succeeding legislature. South Carolina, Delaware and Hawaii were, therefore, the only states and territories not represented at the Exposition.

Forty-four states, territories and possessions were represented by buildings of their own. Eleven states and territories were not represented by buildings, but with the exception of the three sub-divisions mentioned, South Carolina, Delaware and Hawaii, all were represented in the exhibit palaces.

According to the report of the department of domestic exploitation the total value of participation by the states and territories was \$9,346,677. This included all moneys appropriated by legislative assemblies, all funds raised by popular subscription and all exhibits loaned or donated to the commissions representing the states and territories. The amount of money actually expended by the commissions, derived from legislative enactment and popular subscription was \$7,092,786. The difference between the total

cost of state participation (\$9,346,677) and the cash expenditures (\$7,092,786) represents the value of exhibits donated or loaned to the states and territories.

In a number of states the counties have the power to appropriate money for exposition purposes. In California an enactment of the legislature specifically empowered the boards of supervisors of the several counties to levy a tax which shall not be in excess of two percent of the taxable value of all property in the counties in order that the expense of making exhibits of the natural resources of the counties may be met. This also could be done in modified form in Colorado, Florida, West Virginia, North Dakota and a number of other states.

For the first time in the history of expositions the United States Government made appropriations to defray the expense of making exhibits of the resources of Alaska and the Indian Territory. Honorable Thomas Ryan, assistant secretary of the interior, was appointed chairman of the commission representing these two territories, and he in turn appointed F. C. Hubbard, of Muskogee, executive commissioner for the Indian Territory and named an honorary commission composed of six prominent citizens of the territory to represent each of the six civilized tribes. The government appropriation of \$25,000 was made upon condition that the people of the territory would raise \$25,000 by subscription within a specified time. This condition was complied with and a fund of \$50,000 thereby became available.

The Alaska commission consisted of Assistant Secretary Ryan, chairman, and Governor John G. Brady, assisted by an honorary commission composed of the mayors of ten towns in the district. The territory was represented by a building and splendid exhibit of minerals, forestry, fish and game, education, agricultural products, curios and Indian relics.

The actual expense of carrying on the work of domestic exploitation was \$62,701.01. These figures included the entire salary account and maintenance of the domestic office, which amounted to \$36,412.94, and the cost of carrying on the work of the department in the several states and territories through the medium of special commissioners, delegations and agents which amounted to \$26,228.07. As fifty-five states, territories, possessions and cities participated in the Exposition, the average cost of carrying on the work of exploitation in the states and territories was \$476.87 per state. The average value of the buildings and exhibits of the states, territories and cities participating was \$169,995.81.

CHAPTER VI

PRESS AND PUBLICITY

Organization of Bureaus—The Corps of Writers—Various Forms of Publicity—The Campaign for Conventions—Liberal Treatment by the Press—St. Louis Papers Averaged Twenty—Eight Columns a Day for Three Years and Five Months

THE press and publicity department was a part of the Division of Exploitation. It was never permitted to lose sight of that essential fact. It worked earnestly and steadfastly to perform its share in the organization toward a common result. When one portion of the foreign field demanded more attention than another, there the press and publicity efforts were concentrated. State after state came in for special press attention. Where the foreign or domestic exploitation needs called for co-operation there the press and publicity influence was focused.

No former exposition brought into its service such a collection of newspaper men in number, in experience and in reputation as did this World's Fair. At one time there were enrolled in the organization over thirty trained and successful newspaper men, in addition to those in the press and publicity department. They were in every one of the four divisions - Exhibits, Exploitation, Works, and Concessions and Admissions. Very early in its organization the press and publicity department established the closest possible relationship with all newspaper men in the Exposition's service. Thus, the experience and active effort of fifty writers were obtained.

Thoroughness not superficiality, stimulus of interest rather than surfeit, characterized the policy of the press exploitation of the Louisiana Purchase Exposition.

In the coterie of writers assembled to serve the Exposition were included men proficient in all of the branches of the journalistic profession. There were men trained by long service in the gathering and distribution of news, in editorial, in descriptive, in scientific and in a great variety of technical writing. Each writer was stimulated to his best effort in the press work for which he was best qualified. So it came about that into every kind of periodical publication went the continued story of World's Fair rise and progress.

The space given by the press of the country to information about the World's Fair was almost beyond belief. In the month of April, preceding the opening of the Exposition, a partial record kept through several clipping agencies showed 231,120 inches, or 1,848,960 lines of space given by daily and weekly newspapers outside of St. Louis. This was at the rate of 431,424 words daily. In May the average was over 450,000 words daily, and from that time until the closing

weeks the attention given to the World's Fair by the press of this and other countries increased.

The figures are exclusive of the space given by the local press. Each of two morning papers of St. Louis printed during three years and five months, from the organization of the Exposition to its close, an average of five and one-half columns daily. In six English and three German daily papers of the city the average daily space given to the World's Fair for three years and five months was twenty-eight and one-half columns.

In the organization of the department of press and publicity and in the development of its work the fact was kept in mind steadily that the Exposition must depend largely upon territory served by St. Louis papers for paid admissions. It had been the history of most expositions that from sixty-five to eighty per cent of the paid admissions were drawn from within a radius of 100 or 150 miles of the location. The policy of the press and publicity department was to meet all calls for information from the local papers in every way possible. The writers for the most part were drawn from those who had received training and had achieved reputation in connection with the press of St. Louis and the Southwest, who were familiar with this reading public. The fruits of the policy were seen in the amount of space and a manner of treatment locally more favorable to the Universal Exposition of 1904 than were accorded toward any previous exposition.

The Committee on Press and Publicity was comprised of Robert H. Stockton, chairman; Walter B. Stevens, vice-chairman; William C. Steigers, Nathan Frank, Daniel M. Houser, Charles W Knapp, John Schroers. The members were newspaper publishers or writers with the single exception of the chairman, who was a practical business man and a highly successful advertiser. This committee, from the time of its organization to the close of the Exposition, directed the policies and passed upon all important details of the press and publicity department.

One of the most important branches of the work of publicity was the campaign conducted to secure conventions of all kinds to be held in St. Louis during the Exposition. This work began and was well under way before the postponement of the Exposition from 1903 to 1904. It met with such success that after the postponement efforts were redoubled. As the result there were held in St. Louis, most of them within the Exposition grounds, 428 congresses, conventions and formal meetings of international, national and state organizations.

Beginning this campaign for conventions, as it may be called, in the summer of 1901, the publicity bureau invited and was cordially given the active cooperation of the mayor of the city of St. Louis, of the exhibits division of the Exposition, of the Business Men's League, of the Merchants Exchange and of various trade, industrial, fraternal and professional local organizations. This showing of organized convention attendance for an exposition had never been approached in the preliminary work of any previous exposition. The delegates and members who attended the various gatherings ranged from 100 to 10,000. The largest conventions in point of numbers were the National Democratic Convention and the National Educational Association. The most important convention or gathering from the exposition point of view was the Congress of Arts and Science, which brought delegates who were the most advanced scientists of their respec-

tive countries, from all parts of the world. In the cases of the smaller organizations, it was estimated that each delegate or member meant the presence of five persons not delegates or members.

This convention campaign meant much more from the exploitation point of view than the assured presence of the delegates and members of the bodies mentioned. In nearly every instance, often through personal effort of the publicity bureau, local committees or local representatives organized to assist in bringing the conventions, and then to entertain the members. Many thousands of delegates and members coming to these meetings had accommodations engaged for them in advance by their local committees and representatives. This movement was stimulated by the publicity bureau and by the free information service of the Exposition. The convention work represented continuous efforts of over two years and a multiplicity of detail which the general public cannot appreciate. As the work progressed it developed the fact that there was almost no organization of any kind or consequence which had no representatives in the city of St. Louis. The various industries, nationalities, fraternal organizations and vocations which this city contains supplied the medium for reaching the state, national and international organizations. The publicity bureau engaged in active correspondence and personal conference with St. Louis members of these organizations, obtaining their help to bring to the city during the Exposition period the bodies to which they belonged. It is just to the people of St. Louis to say that in very few instances was the appeal from the Exposition ignored or rejected by such resident members. Almost unanimously local delegations committed themselves and in most cases worked intelligently to bring their organizations to this city for the annual or biennial meetings.

In some cases organizations had constitutions or by-laws which prohibited them from meeting outside of the city in which they maintained their national headquarters. In such cases arrangements were made for special meetings at the Exposition. Some organizations which had previously pledged themselves or determined their places of meeting elsewhere, arranged for special trains to come to the Exposition after the close of their conventions. Thirty convention halls and one hundred committee rooms were provided as meeting places. There were times in the course of the Exposition when these seemingly abundant accommodations were taxed to the utmost. As organizations committed themselves to hold their meetings in St. Louis during the Exposition an indirect benefit was manifested in the demand created for all possible information about the Exposition. Members of such organizations, as soon as it was settled that they were to meet in St. Louis, became interested personally in the Exposition. The 428 congresses, conventions and gatherings did not include military bodies or special days; they were educational, professional, religious, fraternal and business.

An exposition is a popular meeting place. Some of these bodies would have selected St. Louis for their conventions of 1904 without special urging. At least half of these gatherings were due to the energetic campaigning of the press and publicity department and added not fewer than 1,000,000 to the paid admissions. The entire cost of the department of press and publicity was more than made good through the convention work alone.

Interesting details of the organization and pre-exposition work of the press and publicity department are given in the following extracts from the report of the acting chief, Walter B. Stevens:

The vigor with which the department carried on its work was shown in the first six months by the distribution of 3,199,769 pieces of printed matter in English, 160,000 in German, 148,700 in Spanish, 80,000 in French, 6,000 in Portuguese, 4,500 in Italian.

The news service was rapidly developed. Before the end of six months the department was sending out a weekly newsletter to several thousand papers. A limited clipping service returned 12,000 articles printed in newspapers outside of St. Louis in January 1902, probably not one-tenth of the number which appeared. To the thousands of English papers were added 866 Spanish, chiefly in Central and South American countries; 300 French, and 650 German.

The work of the department was subdivided. Mark Bennitt took charge of the general press bureau, distributing the exposition matter to outside newspapers. A strong local press bureau was organized, with W. A. Kelsoe as superintendent. This bureau collected the news of the Exposition day by day, putting it out in mimeographed form, distributing it to local newspapers, to press associations, to resident correspondents of out-of-town newspapers and to officials of the Exposition. Besides this daily budget of exposition information, a weekly review of exposition occurrences was issued by the bureau. Both local and out-of-town papers were supplied liberally with photographs for illustrations.

The publicity bureau was under the direction of R. H. Sexton. It issued and distributed millions of maps of the Louisiana Purchase, with historical and exposition matter. These maps were especially adapted for school use and were distributed through the public schools of the various states of the Union. Millions of cards containing briefly stated facts about the Exposition and a map of the United States, showing the Louisiana Purchase Territory, were distributed in the correspondence of business houses. Hundreds of thousands of illustrated folders were issued in successive editions.

The records and stock rooms were under the charge of the secretary of the committee, Edward Hooker.

Writers for the department of press and publicity were drawn from every newspaper office in St. Louis and from the staffs of other metropolitan newspapers. They were not journalists in search of jobs. Some of those who gave intelligent and effective effort to "make known through the press" the Universal Exposition of 1904 were Samuel Williams, John C. Lebens, Thomas R. MacMechen, A. C. Cantley, E. D. Kargau, John C. Small, Thomas W. Kemp, Issac Lippincott, E. M. Watson, William C. F. Lenz, E. C. MacMechen, W. T. Marsh, H. G. Nicholas, Edmund Hackett, Joseph N. Patterson, J. A. Lasswell, George P. Griffith, Chas. G. Wiestling, G. R. Barry, George Lamouret, William M. Smith, P. H. Greenwood, William F. Thrall, G. Prather Knapp, Frederick Skiff Field, Charles P. Hamm, G. Roy Flint, Frank L. Merrick, Louis Larrive, Jules F. Valle, D. H. McFarland, Donald G. McCaskey, Stephen W. Bolles, William C. McCarty, Eugene Hart, Mrs. Jessie B. Thomas, Howard Bryan, J. Paul Edwards and M. W. Powell.

Among the writers of national repute whose talents were enlisted with the department were W. V. Byars, Walter Williams, Julian Ralph, Truman A. DeWeese, Edward H. Brush, C. F. Carter, P. V. DeGraw, Paul Oeker, John H. Raftery, Robertus Love, Chauncey Thomas, Claude H. Wetmore.

The division of exploitation had in the foreign field many who had been newspaper men of high standing before they went abroad as commissioners for the Exposition. Among them were John Barrett, Charles M. Pepper, Ernest H. Wands, George F. Parker, Jose d'Olivares, Theodore Hardee, Joseph Brucker, George W. Fishback. These men spread the press propaganda of the Exposition wherever they went. Accredited with diplomatic formality to governments, they associated closely their presentation ceremonies

at foreign offices with calls upon the editors of every nation. They achieved unparalleled results, securing simultaneously government participation and newspaper cooperation.

In the beginning of press work it seemed desirable to promote historical interest in the Louisiana Purchase. This was made a distinct feature and emphasized along various lines. The fact was remembered that when the delegation from St. Louis to Washington in 1899 brought together the senators and representatives of the Louisiana Purchase states, the response to the World's Fair proposition was immediate and enthusiastic on the part of those senators and representatives. It is hardly necessary to say that but for the consolidated support of the Louisiana Purchase states, the favorable action of Congress could not have been obtained. From this experience in Washington, it seemed a fair deduction that if sentimental interest in the Louisiana Purchase Centennial could be promoted among the people of the Purchase, a great deal could be accomplished toward the purpose of early exploitation.

William Vincent Byars furnished two articles from the French edition of Marbois' history of the Louisiana Purchase treaty negotiations. These articles were sent out to a large number of papers and attained wide publicity. Mr. Byars then prepared a history of the first American revolution, which it was not generally known took place within the Louisiana Purchase, antedating by some years the revolt of the colonies against Great Britain. A Declaration of Independence was enunciated at New Orleans against the Spanish authority almost a decade before the Declaration at Philadelphia. This historical revelation was generally published and commented upon. From Colonel A. J. Tullock, of Leavenworth, KS, was obtained the loan of a rare collection of letters and documents, in the original forms, relating to the Louisiana Purchase. A series of articles embracing letters which passed between William Henry Harrison, governor at Vincennes, and Spanish Governor DeLassus, at St. Louis, was prepared by the acting chief of press and publicity. These Harrison-DeLassus letters had never been published until they were put forth by the press and publicity department. They gave important historical light upon the negotiations and upon the American occupation of Upper Louisiana.

Correspondence was opened with the chief of the bureau of statistics of the treasury department at Washington, suggesting that a government publication on expansion, as illustrated by the Louisiana Purchase and its development, would be timely and of value in connection with the Louisiana Purchase Exposition. The chief of the bureau, O. P. Austin, responded promptly that he had already given the subject attention and had been collecting material. In a short time, the government publication appeared, making forty large pages, illustrated with maps, bearing the title of "Territorial Expansion of the United States." it contained historical Facts, many tables of statistics, brought down to the census of 1900, a series of thirty-five maps showing the territorial increase and subsequent division from the time of the first colonies to the latest date. By an arrangement entered into, many thousands of copies of this very interesting publication were distributed under government frank to all parts of the country.

Permission of the department of state to photograph the original of the Louisiana Purchase treaty was obtained and facsimile copies were furnished for extensive use by the press. The first publication by the press and publicity department was an address delivered by the acting chief of press and publicity, Walter B. Stevens, before the Southern Industrial Convention, at Philadelphia, in June 1901. This address gave the genesis of the Exposition and its scope. It was taken up by the Foreign Relations Committee and the recommendation was made that it be translated into several languages and sent out. Changes were made to adapt it to use as a pamphlet, to be issued in German, French and Spanish. The name of the author was dropped, and the pamphlet was widely distributed during the summer of 1901 as the first document of the Exposition.

Two months after the organization of the press bureau a list of 350 daily papers that had by publishing news about the Exposition shown an interest in its success, was prepared. To these papers a budget of exposition news paragraphs was sent weekly. A policy regarding news was inaugurated and continued throughout the service of the press and publicity department. This policy was that the Exposition should be treated strictly as a legitimate source of news, that only such matter as in the opinion of trained newspaper men was desirable to the newspapers should be offered them. Successful results from the adoption of this policy were immediate. Some of the largest papers in the country published every item of exposition news sent them as special matter. The list was increased as other papers showed an inclination to use the matter. In October 1901, the service had been extended to 490 papers. A month later the list was increased to 1,000 and a little later to 1,109. This list grew by the addition of papers which manifested the desire for the exposition news, until in August 1902, there were sent out regularly each week 4,500 copies of this budget.

In the first year of its existence the general press bureau sent out 375 columns of reading matter. The total number of copies of this matter prepared for use by the press was 150,000. This material included several thousands of separate items of news, covering every feature of exposition progress up to August 1, 1902. It was the policy of the department during the years 1901-02 to supply every possible demand for news of the Exposition without crowding a generous press or overdoing the work to the extent of causing a revulsion of the good feeling among editors that would be detrimental to the enterprise. Having in view the danger of an ante-climax the department refrained from offering electrotypes to many newspapers and other periodicals because the time did not seem ripe for that kind of work. Neither was it deemed advisable to send out stereotyped plate matter of exposition news, but wherever there was interest plainly manifested, exposition material was furnished, carefully written and edited.

During the early period a definite policy was arranged between the Division of Exhibits and the department of press and publicity whereby the latter might co-operate and aid but not come in conflict with the work which the Division of Exhibits was doing. With the hearty approval of the Press and Publicity Committee, Director of Exhibits Skiff attached to his staff a well-known newspaper and magazine writer, Edmund S. Hoch. This action was suggested by the following communication from Mr. Skiff:

"May I ask you to consider the possible advantage of attaching to my personal staff a general all-round writer, who shall be denominated literary clerk for the division of exhibits? I believe that having an individual of my own selection, whom I can drill into perfect sympathy with exhibition work, and to whom I can turn from time to time with suggestion of material coming out of the classification, or the correspondence that passes over my desk, will be of distinct advantage to my work, and of general advantage to the exposition cause."

The Press and Publicity Committee adopted a resolution that "This committee heartily approves of the proposition made by the director of exhibits to attach to his personal staff a writer to be of his own selection, such writer to keep in close touch and sympathy with the work of the exhibits division, and to supply material for distribution through the press bureau of this committee."

The Division of Exhibits undertook to reach the trade press in its own way in order to present the claims of the Exposition in such manner as to have the greatest effect upon possible exhibitors. The press and publicity department received from the Division of Exhibits, through Mr. Hoch, such matter as the division deemed it expedient to publish from time to time and made wide disposition of such copy. In this way not only was friction avoided, but the press and publicity department supplemented and assisted

the Division of Exhibits, which, having at its head an experienced newspaper editor as well as an experienced exposition man in the person of Mr. Skiff, was able to carry out a publicity policy of great good from the standpoint of exhibits.

Gradually increasing the number of writers from the ranks of experienced newspaper men, the department of press and publicity supplied an increasing number or calls for special articles for magazines and trade papers. In many instances these special articles amounted to one and two pages, with illustrations.

As early as December 1901, the press bureau began supplying matter to a select list of 260 papers in South and Central America, Mexico and the West Indies. This list was gradually increased to 900 papers, the news of the Exposition being translated and mailed regularly to these papers with results that were very satisfactory. French and German lists were added about the same time and increased as the disposition to recognize the Exposition was manifested by editors of papers on the continent of Europe.

In the year preceding the opening of the Exposition the general press bureau sent out 1,760 consignments of cuts and photographs of World's Fair subjects to newspapers making requests for them. It was the policy of the bureau to refrain from offering cuts and to send pictures only when asked. The bureau maintained during the year a frequent news service to about 6,000 newspapers, which included all dailies in the country. In the latter part of the year there was undertaken and continued through the greater part of the Exposition period, the distribution of four weekly syndicate articles. These syndicates covered nearly 400 Sunday newspapers and magazine supplements. Two of these syndicates of about thirty-five papers each, received photographs and made their own illustrations. These syndicates included the leading newspapers of the country. The other two syndicates were supplied with special articles without illustrations.

Three months before the Exposition opened the general press bureau was carrying in stock articles on the Exposition under 400 different titles, from which it was able to meet special calls promptly.

Press matter and pictures were supplied freely and regularly to the *World's Fair Bulletin*, a monthly magazine published during the pre-exposition and exposition periods. A notable contributor to the *Bulletin* was Thomas W. Park, of the secretary's staff.

The press and publicity department maintained during the year 1903 offices in New York City and Washington, with writers of such good standing that they were enabled to secure admission of World's Fair material in large quantities to many high-class publications of the eastern cities. During this year a Canadian department was established, with the result that the Exposition received very wide publicity through the press of Canada. Over three hundred Canadian papers used World's Fair news regularly. A weekly letter in German was supplied to 800 German newspapers.

CHAPTER VII

DIVISION OF WORKS

Organization of Departments—Appointments of Chiefs—Topography of the Site—A Labor Bureau—The Policy of Tree Preservation—Contracts for the Exhibit Palaces—Details of the Plans—The Dimensions—Cost per Square and Cubic Foot

FOLLOWING his appointment, Director of Works Issac S. Taylor, opened offices in the Odd Fellows building on September 4, 1901, and began the formation of the departments of his division. These departments included architectural, civil engineering, electrical and mechanical engineering, sculpture, landscape, and mural decoration. The immediate office force of the director of works consisted in the beginning of a bookkeeper, a chief clerk, a stenographer, and a messenger. This force was gradually increased by six inspectors, three stenographers and three clerks.

The director of works had charge of the placing of insurance on all exhibit buildings, which was immediately under a superintendent of insurance. A labor bureau was established early in the construction period to assist the contractors to secure suitable help for construction. The director of works adopted a rule of vouchers individually signed by him for each and every payment. This rule was followed carefully throughout the entire work.

Great care was exercised in the selection of the principal assistants and heads of departments in the Division of Works. In several instances experience in exposition work was taken into consideration.

Richard H. Phillips was appointed chief civil engineer in charge of the department of civil engineering September 1, 1901.

P. J. Markmann was appointed chief construction engineer November 1, 1901.

Harry Weatherwax was appointed chief draughtsman November 21, 1901.

E. L. Masqueray, as chief of design, took up the work of designing the accessories soon after he arrived in St. Louis, when the general picture had been determined upon, about the middle of September 1901.

Henry Rustin was appointed chief electrical and mechanical engineer November 23, 1901. He engaged immediately in his work which embraced some of the most vital and important factors that were to make up the physical features of the Exposition.

In November 1901, a full force in the architectural department was at work. The first set of drawings for one of the large exhibit palaces was delivered by Van Brunt & Howe, architects for the Varied industries building in October 1901.

Among the early appointments by Director of Works Taylor, were Humphreys Castleman, superintendent of insurance; Allen C. Tanner, chief of labor bureau; Karl St. John Hoblitzelle, secretary to the director of works; M. P. Stevens, chief clerk.

The following comments by Director of Works Issac S. Taylor upon the site, from the standpoint of the architect, are pertinent:

The wisdom of the Exposition Company in selecting the location finally determined upon cannot be too highly commended from the standpoint of the architect and the landscape artist. Neither the architects who were afterwards to compose the commission nor the landscape architect who later on developed the landscape features, were consulted concerning the selection of the site; nevertheless, when the same was presented to them it met with their most hearty and enthusiastic approval.

The site chosen embraced 657.36 acres of land, being the western half of Forest Park, situated six miles from the Mississippi River, the western boundary of the park site being within a few hundred feet of the city limits. The site was nearly a parallelogram, about one mile east and west and one mile north and south; a range of low hills some sixty feet (60'0") high runs east and west near the center line of the site. The portion of land lying north of this range and below it was comparatively level. This northern portion was sparsely grown with trees at its eastern end; at its western end there was a tangle of wild woods, with trees of large dimensions and a dense undergrowth, the ground being swampy in places, while in others it rose in elevations twenty to thirty feet in height, divided by deep ravines; this portion was commonly known as the Wilderness. On the eastern end was a shallow body of water of several acres in extent; it was used for boating during the summer months, and in winter afforded ample area for skating. From the crest of the hills southward the ground was very uneven, covered with an almost unbroken forest of oak, hickory, elm and other varieties of trees; this southern half of the park presented few eligible sites for large buildings, and was not used to any extent except at its east end, where the comparatively small state buildings were picturesquely placed and made to conform to the natural grades of the ground. None of the forest trees was sacrificed, except those immediately upon the sites of the buildings,

Flowing into the grounds from the north, a little west of the north and south center line, was the River des Peres; it flowed southwardly toward the foot of the hills and thence eastwardly in an extremely tortuous route till it left the site on its eastern boundary. This river was nearly a dry bed for a greater part of the year, but in times of flood, during the spring and fall months, carried a great volume of water with a swift current. The course of this stream lay under the proposed sites of several of the exhibit palaces. As economy in construction was an urgent and necessary consideration, the management of this stream in connection with the erection of buildings presented an engineering problem serious and difficult. It was found necessary to change the course of the stream, and under the skillful direction of the engineers a wooden conduit was constructed, which proved eminently successful, and cared for floods of almost unprecedented volume, which occurred during the course of the construction of the buildings and also during the progress of the Fair itself. The general nature of the ground throughout the site, so far as its sustaining qualities were concerned, was well adapted for building, being generally of a close, compact clay. The low-lying original bed of River des Peres presented difficulties which were overcome by use of long piling for foundations after filling was done.

The entire site was destitute of domestic water supply, gas, sewers and drains, and its generally rugged broken conditions entailed many engineering difficulties and necessitated a large expenditure of money to establish that uniform, generally level condition necessary for the grouping of the large exhibit palaces.

Immediately after the formation of the commission of architects, it was the unanimous sense of the commission that a larger area of ground than that contained in the Forest Park site would be necessary for the full development of the building scheme. While the 657.36 acres contained in the accepted site would have been sufficiently large to have received the main building and the adjuncts to same, provided the ground itself had been in a physical shape suitable for use, the broken surface of a part of this ground rendered the use of the entire site for building purposes impracticable. The demands for accessibility, the necessity of placing certain of the accessory buildings in as close touch with the main exhibit palaces as possible, and the desire and determination of the Exposition management not to remove a tree from the site that it was possible to save, emphasized the necessity of additional ground area. The present condition of the southern half of the park site will attest the efforts of the management to preserve the forest trees, as thousands of same remain in place, vigorous and unharmed.

Negotiations were entered into with the trustees of Washington University for the acquisition of the grounds and buildings of that institution, and on December 20, 1901, a lease was signed for the use of the university grounds and buildings. The grounds are bounded on the east by Skinker Road, which was the western boundary of the park site. They contain 108.9 acres of ground. At the time possession was given to the Exposition management there were seven buildings, fully completed on same, at a cost of \$755,554.54. These buildings were most substantially built, of fire-proof construction; six of the above buildings have outside walls constructed of Missouri red granite. These and the buildings built on the university grounds during the period prior to the opening of the Fair are now used by the Washington University for its institution of learning. These buildings and grounds were thoroughly adapted for the uses of the Exposition Company and were occupied by the company immediately after it obtained possession. The main center building was used for general administration purposes, the President of the Exposition having his office in same. The building immediately to the south of the center building was devoted to the Division of Works; the building to the north was occupied by the Division of Concessions and Admissions. This building was devoted to the ethnological exhibit during the World's Fair period and contained 15,672 square feet of exhibit space. The following additional buildings were constructed and practically completed by Washington University immediately before the opening of the Fair:

Dormitory

Physics Building

Library

Gymnasium

The library building was used for halls for congresses by the Exposition Company; the gymnasium building, and its field were used for athletic contests and exhibitions; the dormitory buildings were used for sleeping quarters for those exposition officials and attaches who were assigned to same; the physics building was used by the Board of Lady Managers for assembly rooms and entertainments.

The acquisition of the university grounds and buildings was of great advantage to the management of the Fair, affording thoroughly suitable quarters for the entire administration during a period of nearly three years, and supplying quarters devoted to exposition purposes proper during the period of the Fair.

The total expenditure by Washington University on its buildings used by the Exposition Company amounted to \$1,378,000.00; this does not include an expenditure of \$165,000.00 on the grounds for grading and embellishing, made by the trustees of the university. These buildings afforded 135,736 square feet of available area.

Following the acquisition of the Washington University grounds, leases were made by the Exposition Company for ground immediately west of and adjoining the park site, containing 420.8 acres. Following this, what was known as the Catlin Tract, adjoining the park site on the north, containing 59.6 acres, was leased. This tract was devoted to concession buildings, and the broad avenue extending some three thousand feet through the center of same was known as "The Pike." Its close proximity to the main

picture enhanced its value for show purposes, while its broad, level surface was admirably adapted for building purposes. The ground immediately west of the park site was of a hilly, rolling nature, cut with deep ravines and was of a character similar to that contained in the park site.

The following interesting figures show the cost, area and other details of the main exhibit palaces and buildings, the two pavilions east and west of Festival Hall, the Colonnade of States, Festival Hall and the Steam, Gas and Fuel building. It should be explained, however, that the cost of these buildings as given does not include architects' commissions, cost of plumbing, cost of statuary on buildings, electric wiring on and in buildings, cost of piping for high pressure water supply for fire purposes. Nor is the cost of superintendence and making of drawings included.

Varied industries: The contract was signed February 14, 1902, with the Rountree Construction Company. The area covered by the building, exclusive of courts, was 452,300 square feet. The cubic contents, inclusive of all towers, the dome and the corner pavilions amounted to 34,458,000 cubic feet. The actual cost of this building was \$703,815.00. The cost per square foot under roof was \$1.55. The cost per cubic foot was 2 4/100 cents. The average height of the building was 76 feet. The area covered was, as stated, 452,300 square feet, but of this amount 77,100 feet was utilized by the walls, loggias and vestibules.

Education and Social Economy: The contract was signed February 25, 1902, with Dunnivant & Estel, contractors, the firm name being changed during construction to John J. Dunnivant & Company. The area covered by the building, inclusive of court, was 336,000 square feet. The cubic contents, inclusive of all loggias, pavilions, etc, amounted to 20,709,000 cubic feet. The actual cost of this building was \$365,421.98. The cost per square foot under roof was \$1.087. The cost per cubic foot was 1 8/10 cents. The average height of the building was 61 feet, 7 inches. The area covered was, as stated, 336,000 square feet, but of this amount 43,600 feet was utilized by the walls, vestibules, loggias and pavilions.

Electricity: The contract was signed March 21, 1902, with the Goldie Construction Company. The area covered by the building, inclusive of court, was 331,400 square feet. The cubic contents, inclusive of all loggias, vestibules, cloisters, etc, amounted to 20,269,600 cubic feet. The actual cost of this building was \$412,948.11. The cost per square foot under roof was \$1.42. The cost per cubic foot was 2 cents. The average height of the building was 69 feet 9 inches. The area covered was, as stated, 331,400 square feet, but of this amount 74,700 feet was utilized by the walls, vestibules, loggias, pavilions and cloister.

Machinery: The contract was signed April 15, 1902, with Smith & Eastman, contractors. The area covered by the building was 405,856 square feet. The cubic contents, inclusive of all walls, porches, pavilions and towers amounted to 27,493,350 cubic feet. The actual cost of this building was \$511,042.19. The cost per square foot under roof was \$1.259. The cost per cubic foot was 1 9/10 cents. The average height of the building was 68 feet. The area covered was, as stated, 405,856 square feet, but of this amount 48,006 feet was utilized by the walls, vestibules, porches, corner pavilions and main tower.

Main Art: The contract was signed July 8, 1902, with the Goldie Construction Company. The area covered by the building was 61,658 square feet. The cubic contents amounted to 3,577,666 cubic feet. The cost of this building, of stone and steel construction and fireproof, was \$621,906.73 (approximately). The cost per square foot under roof was \$10.09. The cost per cubic foot was 17½ cents. The average height of the building (from footing to roof level) was 57 feet 10 inches.

Two Art annexes at sides of Main Art building: The contract was signed July 8, 1902, with the Goldie Construction Company. The area covered by the buildings was 158,556 square feet. The cubic contents amounted to 5,921,235 cubic feet. The cost of building was \$329,354.17 (approximately). The cost per square foot under roof was \$2.08. The cost per cubic foot was 5½ cents. The average height of the two buildings was 37 feet 4 inches.

Sculptural Hall, Art annex: The contract was signed September 4, 1903, with the Goldie Construction Company. The area covered by the building was 17,795 square feet. The cubic contents amounted to 769,830 cubic feet. The actual cost of this building was \$39,440.00. The cost per square foot was \$2.21. The cost per cubic foot was 5 ⅓ cents. The average height of the building was 43 feet 8 inches.

Liberal Arts: The contract was signed August 9, 1902, with the Kellerman Contracting Company. The area covered by building was 391,172 square feet. The cubic contents, inclusive of all pavilions, colonnades, entrances, vestibules and wall, amounted to 25,793,000 cubic feet. The actual cost of this building was \$476,957.20. The cost per square foot under roof was \$1.219. The cost per cubic foot was 1 ⅓ cents. The average height of the building was 66 feet. The area covered was, as stated, 391,172 square feet, but of this amount 62,952 feet was utilized by pavilions, entrances and colonnades.

Mines and Metallurgy: The contract was signed September 13, 1902, with the Hill-O'Meara Construction Company. The area covered by the building, including overhanging roof and obelisks, was 443,286 square feet. The cubic contents, including outside corridor, entrances and obelisks, amounted to 31,000,00 cubic feet. The actual cost of the building was \$498,661.72. The cost per square foot under roof was \$1.12. The cost per cubic foot was 1 ⅓ cents. The average height of the building was 70 feet. The area covered was, as stated, 443,281 square feet, but of this amount 95,976 feet was utilized by the walls, overhang, entrances and obelisks.

Manufactures: The contract was signed October 16, 1902, with John J. Dunnivant & Co., contractors. The area covered by the building, inclusive of court, was 564,642 square feet. The cubic contents amounted to 33,301,072 cubic feet. The actual cost of this building was \$723,510.00. The cost per square foot was \$1.37. The cost per cubic foot was 2 ⅓ cents. The average height of the building was 63 feet, 3 inches. The area covered was, as stated, 564,642 square feet, but of this amount 104,334 feet was utilized by the pavilions, colonnades, entrances, passages, vestibules and walls.

Transportation: The contract was signed December 17, 1902, with Henry W. Schlueter. The area covered by the building was 690,038 square feet. The cubic contents amounted to 45,0113,042 cubic feet. The actual cost of this building was \$684,608.76. The cost per square foot under roof was \$0.992. The cost per cubic foot was 1½ cents. The average height of the building was 65 feet, 3 inches. The area covered was, as stated, 690,038 square feet, but of this amount 70,213 feet was utilized by the entrances, vestibules, walls, pylons, etc.

Two Restaurant Pavilions on Art Hill: The contract was signed December 27, 1902, with the Goldie Construction Company. The area covered by the buildings was 24,800 square feet. The cubic contents amounted to 1,087,580 cubic feet. The actual cost of the buildings was \$109,740.00. The cost per square foot under roof was \$7.79. The cost per cubic foot was 10¼₁₀ cents. The average height of buildings was 77½ feet.

Colonnade of States, Proper, Art Hill: The contract was signed December 27, 1902, with the Goldie Construction Company. The area covered by the building was 21,224 square feet. The cubic contents amounted to 693,000 cubic feet. The actual cost of building was \$59,740.00. The cost per square foot was \$2.81. The cost per cubic foot was ten cents. The average height was 28 feet.

Festival Hall: The contract was signed August 19, 1903, with Strehlow & Phelps. The area covered by the building was 41,700 square feet. The cubic contents amounted to 4,613,000 cubic feet. The actual cost of this building was \$218,430.35. The cost per square foot was \$5.24. The cost per cubic foot was 4 7₁₀ cents. The average height of the building was 110 feet, 6 inches.

Steam, Gas and Fuel (Boiler House): The first contract was signed January 28, 1903; enlarged and second contract signed August 1, 1903, with the American Bridge Company. The area covered by the building was 97,866 square feet. The total contents amounted to 5,123,700 cubic feet. The actual cost of this building was \$135,480.00. The cost per square foot was \$1.384. The cost per cubic foot was 2 64/100 cents. The average height of the building was 52 feet 4 inches.

Agriculture: The contract was signed March 4, 1903, with Caldwell & Drake. The area covered by the building was 809,000 square feet. The cubic contents amounted to 51,675,400 cubic feet. The actual cost of this building was \$525,491.07. The cost per square foot under roof was 65 cents. The cost per cubic foot was one cent. The average height of the building was 63 feet 9 inches. The area covered was, as stated, 809,000 square feet, but of this amount 17,384 feet was utilized by the entrances, vestibules, pylons and walls.

Horticulture: The contract was signed April 8, 1903, with Caldwell & Drake. The area covered by the building was 236,940 square feet. The cubic contents amounted to 13,335,000 cubic feet. The actual cost of this building was \$227,338.57. The cost per square foot under roof was 95 9/10 cents. The cost per cubic foot was 1 3₁₀ cents. The average height of the building was 56 feet 3 inches. The area covered was, as stated, 236,940 square feet, but of this amount 7,070 feet was utilized by the entrances, vestibules and walls.

Forestry, Fish and Game: The contract was signed June 9, 1903, with the Kellerman Contracting Company. The area covered by the building was 175,150 square feet. The cubic contents amounted to 10,215,710 cubic feet. The actual cost of the building was \$170,454.48. The cost per square foot under roof was 97 3/10 cents. The cost per cubic foot was 1 ⁶⁷/₁₀₀ cents. The average height of the building was 58 feet 4 inches. The area covered was, as stated, 175,150 square feet, but of this amount 3,350 feet was utilized by the walls, pylons, etc.

Live Stock: The contract was let to the Baerveldt Construction Company except for the four dairy barns, which cost \$28,970.12. The forum, embracing 111,588 square feet, cost \$32,318.00. Congress Hall, covering 16,952 square feet, cost \$18,079.00. The thirty-two stock barns, which embraced 241,162 square feet, the feed barn and the loading platforms altogether cost \$97,067.00. The total cost of the Live Stock group of buildings was \$176,434.12.

The entrances and exits cost \$31,711.00. This was exclusive of the entrance turnstiles. There were 130 entrances, divided into 13 groups. The cost of the turnstiles was \$25,416.50. The cost of the ticket booths, of which there were 80, was \$6,940.00.

CHAPTER VIII

CONCESSIONS AND ADMISSIONS

Organization of the Division—Selections of Department Chiefs—Policies Carefully Considered—An Inquiry from the Lady Managers—Amusements of High Character Assured—Important Provisions in All Contracts—How the Advertising Was Regulated

THE organization of the Division of Concessions and Admissions was effected and its operations inaugurated with the appointment of Norris B. Gregg as director of concessions and admissions. Mr. Gregg entered upon his duties in January 1902.

The organization of the Board of Directors provided for a Committee on Concessions, the duties of which were defined as follows:

The Committee on Concessions shall consist of five members and shall have special charge of all matters pertaining to concessions and privileges and the occupation of space therefor in and about the exposition property.

The Concessions committee as appointed in June 1901, was composed of the following: George L. Edwards, chairman; J. J. Wertheimer, vicechairman; W. B. Wells, C. F. Blanke, J. J. Turner.

The first meeting of the Concessions committee was held July 6, 1901, at the Mercantile Club, and was attended by George L. Edwards, J. J. Wertheimer, W. B. Wells and C. F. Blanke.

The first change in the organization of this committee was caused by the resignation of C. F. Blanke, September 10, 1901. A. L. Shapleigh was appointed to fill this vacancy.

The transfer of J. J. Turner to Pittsburgh, to fill the position of third vice-president of the Pennsylvania Lines, prompted his resignation from the committee and from the board. This vacancy was not filled in the Committee on Concessions until the appointment of Harrison I. Drummond, in 1904.

Mr. Gregg performed the duties of director of the Division of Concessions and Admissions for some time before accepting formally the appointment. In that capacity he brought before the Committee on Concessions various propositions and recommendations.

As chairman of the Committee on Supplies, the position to which he was appointed when the committees of the Board of Directors were named, Mr. Gregg came into close relations with what might be called the business management of the Exposition.

The great task entrusted to Director Gregg and to the Committee on Concessions was that of arranging not only for the amusements, but for all kinds of privileges upon the exposition grounds. By the term concessions as construed was meant every line of business conducted upon the grounds both before and during the Exposition for purpose of gain, whether the object of such business

was for the comfort of the public or for its amusement and entertainment.

In the first year of preparation the work of the director and of the committee was devoted largely to questions of general policy.

Director of Concessions and Admissions Gregg, in his report pays strong and deserved tribute to the Committee on Concessions. He says:

The work of this committee, embracing as it did, the letting of concessions, and later, the work of the adjustment committee, was arduous and exacting. It required of the members of this committee the sacrifice of personal matters and private business. The trust and confidence implied in their appointment upon so important a committee were fully appreciated, and the exacting duties imposed by their acceptance of this appointment were fully realized. The close of the Exposition permitted the members of the committee to surrender their duties with the personal satisfaction that no call was disregarded, and that your trust and confidence had not been betrayed. It is with feelings difficult to express that I wish to convey to you and to them, in this official way, my appreciation of their work and the loyal support which, as individuals and as a committee, they accorded me at all times as director of the division. Had it not been for this support and aid the burden would have proven too heavy under the tension and strain imposed during the period from September 1, 1903, to June 1, 1904. It was the wise counsel and the sound business principles which made each one a factor in his particular line, that contributed so largely to the fact that "The Pike" stands unrivaled as an amusement street in exposition history.

One of the earliest questions brought to the attention of the exposition management with regard to concessions was suggested by a resolution of the Board of Lady Managers. This resolution was presented to the Board of Lady Managers in September 1902, by Miss Helen Gould, was adopted unanimously and was forwarded to the President of the Exposition, who immediately laid it before the Executive Committee. The resolution follows:

Resolved, That it is the earnest desire of the Board of Lady Managers of the Louisiana Purchase Exposition that there be no indecent dancing or improper exhibits in the Midway during the Exposition, and that the Louisiana Purchase Exposition Company be urged to use the utmost care in awarding the concessions for shows, in order that there may be no objectionable features.

The Executive Committee referred the resolution to the Committee on Concessions, with a request for prompt consideration and report. The reply of the Director of Concessions follows:

St. Louis, Mo., December 18, 1902.

Hon. D. R. Francis, President, Louisiana Purchase Exposition Company, St. Louis, Mo.:

DEAR SIR-The resolution of the Board of Lady Managers, requesting that there be no indecent dancing or improper exhibits in the Midway, was read to the Committee on Concessions on December 17th. The committee requested me to state that the request of the Board of Lady Managers will receive careful consideration.

On this connection we would call your attention to Articles III and VII of the printed form of the concessions contract.

Respectfully submitted,

(Signed) NORRIS B. GREGG,

Director of Concessions and Admissions

In order that it may be made clear to what extent the Exposition management had already gone in the precautions against improper amusements Sec-

tion 3 in all of the concession contracts, referred to by Director Gregg, is given:

The director of concessions shall have the power at all times during the existence of this contract to stop any show or amusement feature of any concession which, in the opinion of said director of concessions, shall be against good morals or the best interest of the Exposition; and the concessionaire agrees that, upon the written order of the director of concessions so to do, he will immediately stop the performance of such show or amusement feature, or any part of it, and upon the failure of the concessionaire to promptly carry out such order, the director of concessions may order the summary removal of said show or amusement concession, or any part of it, from the exposition grounds; and the concessionaire hereby waives any and all claims for damages occasioned by reason of such removal or the closing of said show or amusement concession in manner aforesaid.

Section 7, also referred to by Director Gregg, was even more elaborate, as will be seen from the reading of it:

The concessionaire shall at all times be subject to the rules and regulations, special or general, which shall from time to time be prescribed by the director of concessions in the soliciting of any person to buy any article that he may have for sale, or the soliciting of any person to attend or patronize in any way any amusement concession, or any amusement feature of any concession herein granted, and shall not hawk, cry or announce said sales or attraction in any manner whatever, and shall not peddle any article about the grounds or buildings of the Exposition, but will sell the same only in and from the space or spaces described in this agreement, and shall not advertise in any manner or form whatever on or about the space or spaces herein allotted, nor advertise elsewhere, except by means of such reasonable signs or other forms of advertisement as shall be approved by the director of concessions, and suitable to draw attention to the particular concession herein contemplated; and shall not employ or use persons known as "spielers," "criers" or other noise-makers; and shall not employ or use any form of show, device or attraction of any kind outside of the space or spaces described in this agreement, unless the special permission, in writing, of the director of concessions shall have been first had and obtained. And the said director of concessions may, at any time, change, modify, or entirely withdraw any such written permission which may have been given to the concessionaire, and immediately upon written notice thereof, the concessionaire agrees to conform to such change or modification, and if ordered so to do, to entirely discontinue any or all of the privileges granted in and exercised by virtue of such permission; it being the intention hereof that all and every scheme or device or means of attracting patronage to the concessions herein granted shall be completely under the supervision and control of the director of concessions, and any violation of any of the orders, rules or regulations which may be prescribed by the said director of concessions, shall give the Exposition, acting through the director of concessions, the right to summarily remove any or all of the objectionable features, or, at the option of said director of concessions, to close the concession herein granted altogether or until such orders, rules or regulations are complied with; and any repetition or continued violation of such order, rules or regulations shall constitute a forfeiture of all the rights herein granted, and all of the property and effects of the concessionaire may be summarily removed from the exposition grounds on the order of the director of concessions.

By direction of the Executive Committee the secretary of the Exposition was instructed to send to the Board of Lady Managers the following letter:

St. Louis, Mo., December 23, 1902.

MADAM PRESIDENT - I am directed by the Executive Committee to reply to your letter

conveying the resolution adopted by the Board of Lady Managers on the subject of concessions. The resolution was duly referred by the Executive Committee to the director of concessions and the Committee on Concessions with request for careful consideration. The report of the director and of the Committee on Concessions has been received. The director and the committee express the belief that under the conditions imposed in all contracts the concessions will be so regulated as to render it impossible to present any amusement that can be classed as indecent or improper.

Very respectfully,

(Signed) W. B. STEVENS, *Secretary*

Mrs. James L. Blair, *President Board of Lady Managers, Building*

On the first of July 1902, the services of E. Norton White were secured to assist the director of concessions and admissions. Mr. White came to the Louisiana Purchase Exposition with valuable experience gained through his connection with the World's Columbian Exposition Company during a period of several years. He became secretary of the Committee on Concessions and assisted the director in all of the work of the office, aiding in the negotiations with concessionaires, planning systems and blanks for both the departments of concessions and admissions. Upon the organization of the department of admissions Mr. White was made acting chief, and subsequently chief of the department.

John A. Wakefield, who had gained much exposition experience as general secretary of the Omaha Exposition, entered the service of the Louisiana Purchase Exposition Company in March 1903, becoming upon the organization of the department of concessions the chief of that department.

The excellence of the work of organization and preparation in the Division of Concessions and Admissions was attested by the fact that it was not found necessary when this organization was put to the test to change or reconstruct.

The report of Director of Concessions and Admissions Greg contains the following interesting details of the pre-exposition work:

Formal applications for concessions of every kind were received upon blank forms prepared for the purpose, which were filed in the office of the director, awaiting consideration and presentation to the concessions committee. These applications numbered thousands, and the work of classification, correspondence and interviews in the office of the director was a stupendous task, as it was essential to retain in a separate class only those that were deemed worthy of the attention of the committee.

The committee held dally sessions, and after the selections had been made it was found in a number of instances that the stock panic had changed the ability of stockholders and promoters to meet their obligations, and substitute attractions had to be installed. In other cases, where the attraction was one that was deemed necessary in order to carry out the policy and plan of the director and the committee—that a tour of the Pike could rightfully be named "A Trip Around the World"—increased responsibility was added to the director and committee, in assisting to plan for and place the stock of the concession. The delay in assigning the plat of ground for amusement features made it impossible to write a contract and assign the site while this condition existed. The assignment, when made, was not satisfactory to concessionaires and their stockholders, and added to the burden of the financial situation.

So acute did the situation become that the only solution of the question was the lease of the Catlin tract of land upon the north side of the exposition grounds, the securing of which killed the effort being made to establish an outside midway at the gates of the Exposition, and placed the concessions in a position to earn a very much larger sum for the Exposition than would have accrued had the original plan been adopted.

CHAPTER IX

PRE-EXPOSITION PROGRESS

Negotiations for Exhibit Space—Foreign Countries Manifest Growing Interest—Postponement to 1904—Action by Congress—Wisdom of it Demonstrated—Payment of Subscriptions—The Prompt Response Without Parallel

IN the Division of Exhibits work proceeded with increasing activity and with most satisfactory evidence of progress. The inquiries and definite proposals for exhibit space received from every part of the United States, North and South America and from European and Asiatic countries indicated a substantial and increasing interest in the Exposition.

The greatest number of applications and inquiries were of course reached from prospective individual exhibitors. Manufacturers and important interests and institutions everywhere in our own country and abroad asked for preliminary reservations of space or for data upon which to base future consideration and decision. The campaign with individual exhibitors was necessarily especially active and extensive and was prosecuted with great assiduity and energy by each department of the Division of Exhibits as organized. The active co-operation of the various exhibits committees, constituted of members of the Board of Directors, proved an efficient aid in this early work of exploitation and negotiation, particularly in connection with manufacturing concerns in this country.

To all in the United States who made requests for space a formal application blank upon which to make definite and specific requisition was sent, together with a copy of the official classification and the rules and regulations of the Exposition. When returned, properly executed, these applications were recorded in the offices of the department by which received and also in the office of the director of exhibits; after which they were carefully filed to await final distribution of space.

Negotiations for exhibit space by prospective exhibitors in foreign countries, at first introduced individually, were in most cases later conducted or at least concluded by the commissioners-general representing those countries. As soon as each of the respective foreign commissioners-general was appointed, all inquiries and applications for exhibit areas received from establishments, individuals and institutions in the country to which he was accredited were referred to him for disposition. In turn, he promptly made requisition for sections of exhibit area in the various exhibit palaces, sufficient to contain all of the various classes of exhibits that he planned to assemble as representative of that country—thereafter negotiating exclusively with all of its exhibitors. No arrangements were concluded with individual foreign exhibitors except such as were resident in countries not officially or formally represented at the Exposition by commissioners. Such cases developed to be few, Switzerland proving the most notable example.

By July 1, 1902, definite and provisional applications for exhibit space had been received from a number of foreign countries including Mexico, France and Canada. Mexico asked for extensive areas in various buildings, indicating a contemplated important participation. France first made application for 40,000 square meters of floor space, by cable, which request was later formally endorsed, and the proportions of the demand increased by the French commissioner-general in person upon his visit to St. Louis and the Exposition grounds early in June 1902. Applications from other foreign countries, especially of South America, ran the total demand for foreign space to a figure most encouraging at this period in the negotiations.

In the meantime, the states of the Union were making definite and tentative demands for space. Missouri was of course first with its application and most ambitious in its requests; Illinois, Texas, Arkansas, West Virginia, Kansas, Kentucky, Mississippi, Colorado, Arizona and Minnesota followed rapidly with New York, Ohio, Iowa, Wisconsin, Maryland, Alabama, South Carolina, New Jersey and other prominent states-all making requisitions for large and prominent areas of exhibit space in the various exposition palaces. Two car loads of exhibits from Minnesota were received in St. Louis and stored in February, 1902.

With these substantial evidences of success the work of the Division of Exhibits continued with increasing activity and promise of splendid final results. Its operations were steadily extended, and its organization continued and systematically improved and perfected.

By April 30, 1902, four of the principal exhibit buildings were well advanced, the contracts requiring their completion within seven months. Seven of the University group of buildings were about ready for occupation; and three more of the same group were under contract to be completed by March 30, 1903. The director of the Division of Works was confident that all of the structures could be completed in time to install the exhibits and open the Exposition by April 30, 1903.

United States government officials were apprehensive that the structural steel for the proposed Government building could not be procured in time for its completion by May 1, 1903. Foreign governments were declining to participate because they could not get ready in time.

Diplomatic representatives of the government and commissioners of the Exposition were generally advising a year's postponement of the Exposition to increase foreign participation. It had also become evident that more time was required to secure favorable action in some of the states.

The sundry civil act of Congress, approved June 28, 1902, authorized postponement of the Exposition from 1903 to 1904. It provided that "the dedication of the buildings shall take place not later than the 30th of April 1903, and that the Exposition shall be open to visitors not later than the first of May 1904." This action of Congress was practically unanimous. It was taken on an assurance from sixty-two Directors of the company that it would be acceptable. The President of the company addressed the following telegram to the President of the National Commission:

St. Louis, May 1, 1902.

Thomas H. Carter, Washington, D. C.:

In view of the conditions to which you call attention, and in the light of all the facts within the knowledge of this company, it is now very clear that, while the buildings can be completed within the time limit, the respective states and territories and both foreign and domestic exhibitors cannot, within the present time limit, construct the necessary buildings and install exhibits upon a scale commensurate with their desires and the magnitude of the Exposition enterprise. The scope of the Exposition is enlarging from day to day. We are in continuous receipt of expressions from remote countries manifesting desires to participate in the Exposition if more time can be had for preparation. We feel that no effort should be spared to fully meet the expectations of this and other countries as to the character of this Exposition, and that it should in every respect be worthy of the great event which it is held to commemorate. We can use one additional year of preparation to great advantage.

It is therefore, in the judgment of the company, desirable that the time for opening the Exposition be extended one year, if such course meets the approval of the Government, and I am authorized by the Executive Committee to request that you present these conclusions to the President and to the secretary of state, for transmission to Congress.

(Signed) DAVID R. FRANCIS, *President.*

Accompanying this was the following expression of approval signed by the Directors: "We recognize the urgency of the situation and the propriety of immediate action. We herewith express our approval of the message of President Francis, which has been authorized by the Executive Committee."

On the 1st of July, President Roosevelt issued a message announcing the postponement.

In the act authorizing postponement, Congress gave further evidence of the Government's interest in the Exposition by the following appropriations:

Government Exhibits.....	\$800,000.00
Indian Exhibit.....	40,000.00
Life Saving Service	8,000.00
Increase for Government Building	200,000.00

To the operations of the Division of Exhibits, the extension of time effected by the postponement of the opening of the Exposition until 1904 served as splendid impulse. The possibilities of more thorough achievement offered by an additional year of time and effort was an inspiration that yielded much to the final brilliant success of the Exposition. Manufacturers, who before had refused to consider the question of making an exhibit, now took hold and gave promise of performance. Foreign nations which had regarded the time too short for preparation now looked upon the situation with renewed interest.

By this time the work of the division, in all departments of exhibits vitalized, was proceeding with full energy and with daily more encouraging results. Material economies permitted by the postponement of the opening date were effected at once in each department. The organization of the departments of Anthropology, Physical Culture and Live Stock was deferred; as was also the selection of superintendents and other expert aid in connection with the departments already organized-services of a nature not required until a period nearer the opening of the Exposition.

The organization and working efficiency of the forces employed were developed to the highest point and the campaign of exploitation and negotiation carried on was daily serving to extend information of the great opportunities offered to exhibitors by the Exposition, together with a knowledge of its immense scope and high character, to the remotest parts of the world.

During this period the campaign of the Division of Exhibits with prospective exhibitors, domestic and foreign, was at its height. The United States was being thoroughly canvassed in all lines of industrial activity and of social and intellectual endeavor. No agency or co-operation was neglected in the promotion of this work. The organizations of the various state commissions which were now well at work were most advantageously availed of and gave willing and substantial aid. While the direct duties and endeavors of these commissions were generally limited to securing a proper exhibition of the natural resources of their respective states, they joined with the agencies of the Division of Exhibits in interesting the industrial and manufacturing interests of their states in a fitting representation at the Exposition.

Numerous conventions representing important industries were now visited and addressed by chiefs of departments or special representatives of the Division of Exhibits, as were leading civil, commercial, scientific and educational bodies and associations in annual and special assembly. This method of exploitation proved to be very effective. Principal and special facts regarding the Exposition imparted upon such occasions were productive of direct results and were carried generally throughout the country and particularly to those especially concerned in the opportunity offered by the Exposition for the extension among the public of knowledge in relation to industrial and social conditions, development, devices and methods indicating improvement and advancement. Many conventions were addressed each month and no opportunity was neglected to take full advantage of this important and serviceable avenue of publicity. The fact that the character of industry, activity or interest represented and the main subjects discussed at these principal conventions were covered by the classifications of one or other of the departments of exhibits, and that the enlightened consideration and representation of those industries and various activities, educational, commercial, social, scientific and otherwise constituted the principal motives and work of the Exposition, insured to its representatives welcome at all such assemblies, as well as careful attention and cordial and material support to their reports and proposals.

It was upon these occasions and formally before these assemblies that chiefs of the various departments of exhibits were able not only to state important facts regarding the extent and scope of the Exposition but to meet criticisms and answer objections. In certain sections of the country, it seemed for a time almost impossible to have the people and particularly those in control of representative interests understand and appreciate the importance, magnitude and scope of the Exposition. This was especially true of certain communities and districts of the East. In these quarters it appeared that the public could not conceive it possible that anything in the way of an exposition of sufficient importance or merit to command their interest or the interest of the world could be created so far west-beyond the Mississippi River. The task of overcoming this attitude was serious. But most effective work in this direction was done at important national, industrial and other conventions embracing delegates from all sections of the country. Speakers representing the Exposition were seconded and supported by

western delegates who on their way to the conventions had inspected the exposition site and examined into the prospects and proposals. The statements of such men could not be minimized or disregarded as of partisan motive or origin.

The numerous and frequently emphatic and powerful objections urged by many large interests against the advisability of such leading enterprises participating by exhibits in the Exposition were presented at these conventions and were fully and successfully met by the Exposition's representatives. Officers of certain important lines of industry, now under such control as to practically constitute monopolies, did not see the advantage of making any outlay for an exhibit of their products. Inasmuch as they controlled the field, they considered that they did not need to demonstrate to the public the merits of their extensive and varied output-their practical monopoly relieving them of proving superiority over competition. In other cases, leading manufacturers had become convinced that exhibiting at expositions was no longer profitable, that expositions were a past form of attraction-of insignificant rather than compelling interest to the public-that the return netted from an elaborate or even an ordinary installation of exhibits did not justify the outlay involved in such participation. These serious errors of judgment and conclusions were combated effectively and repeatedly as they appeared individually and sometimes apparently concertedly in national industrial conventions and elsewhere. In open conventions the subject always had full discussion and fair consideration with the result that in practically every instance the position of the Exposition and its proposals, the potent advantages offered to industry, education and progress were endorsed, formally, and in general, unanimously. While this expert and authoritative approval did not in all or in a majority of cases mean the removal of the individual opposition described, yet it served as a stimulus which greatly contributed to the success which was now being returned to the efforts of the Division of Exhibits from all directions.

The organization of important departments and sections of the exhibits division was perfected during this period, including the department of livestock, the section of aeronautics and the bureau of music.

Prompt Response of Subscribers:

The plan of collection of subscriptions to the stock of the Louisiana Purchase Exposition Company was a simple one. No better evidence of the public spirit with which the people of St. Louis embarked in the enterprise could have been manifested than was shown by the payments on the subscriptions. The history of expositions is read in vain to find a parallel of the promptness shown by these subscribers. Plain business notices issued to all subscribers as assessments fell due and calling attention in few words to the needs and importance of prompt compliance were in the majority of cases sufficient.

The enthusiastic public sentiment manifested in the early days of the movement was not ephemeral; subscribers were sincere and were ready to meet their obligations. The first subscriptions were taken in the spring of 1899. The first assessment on the stock was made March 11, 1901. As was to be expected, the two years following the first signed subscriptions had witnessed many changes. More than five hundred of the original subscribers had died since signing their subscription contracts and these subscriptions alone amounted to \$105,590.00. The removals, the failures of subscribers, most of them small, numbered fifteen hundred, a total amount of \$50,000.

At the time the first call for assessments was made, the subscriptions on the books of the Louisiana Purchase Exposition Company amounted to \$5,070,845. Subsequent to that time, additional subscriptions were secured bringing the total up to \$5,294,490. By the system of notices and personal appeals the collections up to May 18, 1904, amounted to \$4,766,472.57.

On the date mentioned the first suit against a subscriber of the Exposition Company was filed in court. The cost of collections up to May 18, 1904, had been only \$20,071.02, a little more than one-third of one percent, which included all expenditures for salaries, stationery, postage, rents, printing and incidentals. This remarkable showing had no precedent in the history of expositions and probably none in any public-spirited enterprise of kindred character. The subscription lists contained almost twenty-three thousand names. When the payments lagged in response to simple notices, a plan was formed in July 1903, whereby accounts of \$100 and over were assigned to various banks and trust companies. As the result of this plan about \$300,000 was collected between the date mentioned and January 1904. In the winter preceding the opening of the Exposition a new method was adopted, lists of delinquent subscribers being taken by Directors and other friends of the Exposition who were willing to make personal canvasses and to appeal to delinquents in that way. This plan proved very effective, bringing into the treasury a large amount of money. In May 1904, litigation was resorted to against subscribers who had either wholly defaulted or who were delinquent upon some calls. As the result of this litigation and through efforts of special counsel, payments up to and including January 31, 1905, were made to the amount of \$130,935.

This showing of \$4,800,000 and more collected out of the total subscription does not indicate all that has been realized. The results of the litigation were that many judgments were collected. The significant fact is that twenty-three thousand subscribers to a popular fund with little or no expectation of any return, signing their names for \$5,294,490 have paid voluntarily more than ninety percent of the total amount called for. If there is any instance of civic pride comparable to this, it is not now recalled.

CHAPTER X

ARCHITECTURAL PROBLEMS

Originality in Designs—Day and Night Effects—Areas of Exhibit Buildings—Question of Trusses—Steel or Wood—Immense Quantities of Materials—Evolution of Staff-Working—Distribution of Labor.

THE originality of the architect was given free scope in the designing of the Exposition with first bewildering, then fascinating effects. A uniform skyline of sixty-five feet was established for the buildings but the facades, the entrances and the towers were of charming variety. The treatment was described as "free." It was free in truth. There was a great Corinthian colonnade around Education, while across the Grand Basin the towers of Electricity were made to do duty as pedestals for daring sculpture above the sky-line. Manufactures had a triumphal arch. On the palace of Varied industries were Spanish steeples. Quadrigas crowned the great arched entrances to Liberal Arts. Above Machinery Hall the German towers appeared in clusters. Transportation looked its uses with an ornate "union station" effect in its domed roof and pylons. Mines and Metallurgy had obelisks and immense globes and overhanging roofs. Agriculture stood by itself apart from the fan-formed group of exhibit buildings. It was on a higher level, the largest of all the palaces and the largest exposition building ever erected for one exhibit department. Instead of the colonnade, the facades of Agriculture presented the solidity and plainness in effect of rows of piers for a distance of a third of a mile. In Forestry and Fish and Game, another detached exhibit palace, was worked out the architectural features of the gables of a farm house. Ivory white was the general color scheme but to the domes and steeples and towers was given variety from light gray through several tints to deep orange.

At night the architectural beauty and stateliness were brought out by a novel arrangement of the lights. The building lines were not marked by incandescent bulbs, but these bulbs in countless numbers were placed upon the inner lines of the columns. The light was thrown upon the walls and the colonnades stood out in stronger contrast even than in daylight.

Between sunset and the slow coming out of hundreds of thousands of incandescent lights there was a half hour of deepening twilight in which the World's Fair scenes assumed new beauties. The lawns and the foliage took on a deeper color. The tint of the facades, old ivory as seen in the sunlight, became somber gray. Through the arches of the lofty Colonnade of States appeared patches of the southern sky. The upper line of the colonnade was silhouetted sharply. The fourteen eagles with outspread wings above the states and territories were seen with vivid distinctness from a distance of one thousand feet or more. The figure of Victory on the apex of the dome of Festival Hall was another object brought out in striking relief by the conditions of light and shadow. From the edge of the

Grand Basin, at the foot of the Terrace of States, the geysers rose high in the air, the spray presenting a milk-white appearance in the dusk. The surface of the basin rippled and threw back a reflection of light peculiar to the hour between daylight and dark. The human currents on the plazas and pathways grew sluggish and quiet. It might have been the hour, or it might have been the weariness of all daylight seeing that prompted people to stand or to sit quietly and to talk low at that hour. The bustle of the World's Fair day was gone. The singing of the gondoliers on the lagoons and the music of the bands in the early evening sounded sweeter.

The exact areas of the several larger buildings are given by the department of civil engineering as follows:

Sculpture Hall.....	size	150'	x 100'
Main Art	"	160'4"	x 346'6"
West Wing, Art	"	199'	x 422'6"
East Wing, Art	"	199'	x 422'6"
Transportation	"	1,300'	x 575'
Machinery.....	"	1,000'	x 325'
Machinery Annex	"	475'	x 200'
Varied industries	"	1,059'4"	x 525'
Electricity	"	644'	x 525'
Manufactures	"	1,059'4"	x 525'
Education	"	644'	x 525'
Liberal Arts	"	750'	x 525'
Mines and Metallurgy.....	"	750'	x 525'
Government	"	736'	x 203'
Government Fisheries	"	136'	x 136'

These buildings were spread out in fan shape, with the hinge on the top of Art Hill.

Subsequently, when the tracts of ground west of Skinker Road were secured, the following main buildings were located, with areas assigned as follows:

Horticulture	size	384'	x 384'
Horticulture	"	400'	x 230'
Agriculture	"	500'	x 1,600'
Forestry, Fish and Game.....	"	300'	x 600'

One of the earliest problems in construction was the question of material. The architects and engineers decided that wood instead of steel should be used for reasons which the report of Director of Works Taylor explains:

It was soon apparent that wooden trusses supported on wooden interior columns were adaptable for the purposes of an exhibit building; this proved a most satisfactory solution of the question of materials for parts of the work. At this time the steel market was in such a condition of congestion that it was next to impossible to obtain a sufficient supply of steel for the construction of large and elaborate trusses required for the work in hand. No trouble was experienced in obtaining most excellent long-leaf yellow pine lumber for the construction of the wooden trusses, and at a price which, I am satisfied,

caused a saving over the cost of steel trusses of at least \$500,000.00. In the early stages of construction drawing, it was determined that wooden piles under all principal points of support were necessary, careful computations of wind pressures demanding the use of piles to resist the uplift forces.

Serious problems are presented in designing the construction of a vast building of the nature required for exhibit purposes. In an exposition of the character of the Louisiana Purchase Exposition, the strictest economy must prevail, and the construction must be thoroughly secure and strong; at the same time, due consideration must be given to the fact that the structures are only of a temporary character and for an actual use of possibly ten or twelve months. Technical knowledge, combined with practical experience and good judgment, is essential to the success of such work; great consideration should be given to experience and good judgment.

The magnitude of the exhibit palaces could not be appreciated fully by figures of the acreage included under roof, or of the length and breadth in feet. Realization may be aided by a statement of the quantities and of the variety of materials utilized in one of these exhibit buildings, neither the largest nor the smallest, but what might be classed as an average of the twelve buildings. This building had a length of 1200 feet by a width of 525. It was exceeded in size by the Transportation building and by the Agriculture building. It was larger than the Education building and the Electricity building. It was in the same class with Manufactures, Liberal Arts and Transportation.

<i>Materials</i>	<i>Quantities</i>
Lumber	7,000,000 feet, board meas.
Mill Work-	
Window openings	500
Door openings	130
Glass in windows and doors.....	95,000 square feet.
Metal skylights, with glass.....	32,000 square feet.
Iron and steel.....	445 tons
Roofing	520,000 square yards.
Staff and outside plastering.....	830,000 square yards.
Plaster of Paris for staff work.....	4,000 tons.
Plain plastering.....	12,000 square yards.
Hair for plaster.....	2,000 pounds.
Fiber for staff	40 tons.
Sand for plaster.....	170 cubic yards.
Nails.....	260,000 pounds.
Painting	100,000 square yards.
Interior whitewashing.....	2,000,000 square feet.
Hardware-	
Door Hinges.....	418 pairs.
Door locks and bolts	444
Pivots for pivoted windows.....	626 pairs
Rope for flag poles.....	5,000 feet
Pulleys for flag poles	157
Rope cleats for flag poles.....	157
Sheet Metal-	
Balls for flag poles	154
Eagles	4
Winged Finial statue.....	6

There is another and perhaps more impressive way of conveying an idea of the immensity of World's Fair construction. Suppose a freight train to consist of forty cars; eighteen of these trains were required to haul the lumber from the forests of the South, of the Atlantic coast and of the Pacific coast to St. Louis for the construction of a single exhibit building. The structural iron for that building called for two trains of twenty cars each, the weight per car being much greater than for lumber. Three trains of one hundred cars of plaster and two trains of fifty cars of sand entered into the construction of the palace; eighteen carloads of roofing material, ten cars loaded with glass and four carloads of nails were the smaller items. To color the palace after its completion there was required 3,000 gallons of paint. But between the arrival of the material and the finish by the painters eighty diggers and laborers worked 200 days on the foundations; 140 carpenters sawed, planed and hammered for that period; 100 plasterers were employed two months; 100 staff-workers were engaged 200 days, with 100 nailers following them to fasten the staff to the frame during 100 days; these nailers had 100 helpers; fifty roofers were busy for half a month and then came the 100 painters with two months steady wielding of the brush to apply the color. These figures on construction and on labor must be multiplied by twelve to convey realization of the vast quantities of lumber and other things which entered into construction and of the army of labor which put the exhibit buildings in place.

The vast amount of material used in the construction of exhibit buildings is illustrated by Director Taylor in the following compilation:

	<i>Iron</i>	<i>Lumber</i>
Education and Social Economy.....	110 tons	4,825,000 feet
Manufactures	740 "	11,000,000 "
Machinery	525 "	7,000,000 "
Electricity	422 "	5,670,000 "
Mines and Metallurgy	330 "	7,300,000 "
Liberal Arts	560 "	7,000,000 "
Transportation	980 "	11,300,000 "
Agriculture.....	220 "	3,000,000 "
Forestry, Fish and Game	"	2,500,000 "
United States Government Building	"	3,500,000 "

It will doubtless surprise artists and builders to learn that after construction was completed, only two men were required to keep the staff-work of the exposition grounds and buildings in repair. One of these men was employed to look after the sculpture and wall decorations, while the other gave his attention to the plain plaster. None of the buildings settled to an appreciable degree. Their solid and satisfactory foundations, in a measure, accounted for the scarcity of cracks in the plastered walls. In one building where the ceiling scaled off, it was found that rain had beaten through and caused the clinches of the plaster to disintegrate. In another case, too much sand had been mixed in the plastic staff and the finished work lacked strength.

In one of the many heavy thunder showers which came up in the summer of 1904, a quadriga on the north front of the palace of Manufactures was struck by lightning. A leader of one of the horses was thrown to the ground and another horse was toppled over. Immediately after this storm large numbers of small cracks appeared in this section of the building; but the plaster did not scale nor was its adhesive force affected.

It is not too much to say that since the Columbian Exposition, staff workers have been alert to improve their art. One of the most pleasing and satisfactory features ever seen at an exposition was the structure of the concession known as the Tyrolean Alps. It represented a walled village in a mountain valley, most of the buildings being copies of real German houses. Its charm was in the soft outline of its mountain mass, in its repose and variety. The coloring was apparently the most artless of art. Other than a muslin curtain in one of the cottage windows and a few snowlines on the mountain-top, there were no tints, only shades and smoky grays. From the moulding tiles on the roofs of the pigeon-cote in the village square, these rainwashed colors were perfect. It must be very easy to overdo this kind of work, but the Tyrolean Alps was subdued and harmonized by a master-hand. It would take the German in the Alps a hundred years to get such boards in their Gothic gables and it would take them longer to get those ancient boulders mellowed and crumbling in the defenses of their village. Here the thing was done in three months. The staff-worker did it.

Something of the same kind was seen in the round towers in the Irish Village and in the dungeon walls of Battle Abbey-walls scarcely an inch thick. The big ashlers in the lower courses of the walls in the palace of Machinery showed how staff may be adapted to imitate modern construction and, in the building, known as "From New York to the North Pole" the same thing was demonstrated in a variety of ways.

The winter of 1903-4 was very severe. There were rains, sleet, snow, cold days, thawing weather and considerable wind. Staff-work had a valuable test. In the palaces of Electricity and Varied Industries, constructed when it was proposed to hold the Exposition in 1903, the element of time entered into the test. The verdict is that in fibrous plaster for outside work, great advances have been made in the last ten years.

Contractors at the Columbian Exposition found difficulty in getting a satisfactory binder. Burlap was largely used at a cost of 12 cents a pound. Now Manila fibre answers the purpose much better and may be bought for 4 cents a pound. A solution of alum is now used to tan and harden the gelatin mold which tends to release the cast easily and give sharp, clear expression to the figure. What is called the pointing machine, used to enlarge statues, is a new device and found to be of great value in enlarging figures from a model. Including the figures in groups there were 1200 statues installed at the Louisiana Purchase Exposition. The pointing machine facilitated the production of these statues, as well as the enrichments for panels. Expositions sometimes create such a demand for gypsum plaster that the rock is poorly ground and the flour improperly cooked. Staff-mechanics are coming to be judges of their material and this improves the character and service of their work.

There is no reason why a staff-figure, cast hollow, with protected holes to allow a free circulation of air and painted once a year, should not stand a dozen or fifteen years, exposed to the severest weather, and plain plaster run upon metallic lath should last equally as long. It is popularly supposed that the word "staff" was first used in this connection at the Columbian Exposition. This is an error. It was applied to plastic work at the Paris Exposition of 1878 where the panel embellishments were called "chassis-en-staff."

CHAPTER XI

CONSTRUCTION

National Buildings, Thirty-Four—State and Territorial Houses, Forty Five—Exhibit Palaces and Exposition Structures, Two Hundred and Fifty-Three—Roadways, Seventy-Five Miles—Concession Constructions, Four Hundred and Forty-Eight—The Labor Problem

A SINGLE satisfying picture of the World's Fair was impossible. There was too much to grasp from one point of view. Only by a succession of scenes or a moving picture could this Universal Exposition be appreciated. A bird's-eye view, to be adequate, could be obtained only on the wing. An Intramural car taken at any one of the ten entrances required thirty-five minutes for the circuit made at a speed of ten miles an hour. The Pike was an avenue of a mile with concessions crowded on both sides. The lagoons were more than a mile in length. Eleven granite buildings constituted the University group, formed in quadrangles. The fifteen exhibit palaces, which covered one hundred and twenty-eight acres, cost \$6,312,336.19. Roadways and walks measured seventy-five miles. The buildings of the United States government numbered eleven, and the pavilions of foreign nations were thirty-three. Upon the Philippine reservation were thirty-nine exhibit buildings, restaurants and service houses besides scores of habitations of native architecture. There were forty state and territorial buildings; six houses of comfort erected by fraternal and other organizations; fifty-three restaurants. Structures great and small built for concessions were four hundred and forty-eight. Upon the hotel within the grounds, the Inside Inn, was expended \$400,000. Of decorative features there were eight hundred and fifty installations. The service and small exhibit buildings added sixty-two. The total of distinct constructions was fifteen hundred and seventy-six, ranging in cost downward from the stone and steel palace of Art, costing approximately \$1,000,000. The construction accounts aggregated \$27,435,150.

The cost of the buildings and structures is thus summarized by the Division of Works:

	Number of Buildings.	Cost.
Exhibit Buildings and Structures by the Exposition.....	253	\$7,406,629.68
Buildings constructed and owned by Washington University.....	13	1,378,000.00
National Buildings	34	1,686,966.00
State, Territorial and Municipal Buildings.....	45	1,269,076.00
Philippine Buildings and Structures.....	92	613,418.44
Miscellaneous and other Buildings.....	74	416,716.00
Concession Buildings and Structures.....	448	3,919,426.00

Exhibit Buildings and Structures Built by the Exposition:

Designation of building or structure	Number of Buildings.	Cost.
Agriculture	1	\$ 525,491.07
Education and Social Economy	1	365,421.98
Electricity and Machinery	1	412,948.11
Forestry, Fish and Game	1	170,454.48
Festival Hall	1	218,430.35
Horticulture	1	227,338.57
Liberal Arts	1	476,957.20
Manufactures	1	723,510.00
Mines and Metallurgy	1	498,661.72
Machinery	1	511,042.19
Transportation	1	684,608.76
Varied Industries	1	703,815.00
Main Arts	1	621,906.73
Temporary Arts	2	329,354.17
Ticket Booths	80	6,940.00
Sculpture Hall	1	39,440.00
Live Stock Exhibit Buildings	39	176,434.12
Restaurant Pavilions	2	109,740.00
Colonnades of the States	1	59,740.00
Entrances	13	31,711.00
L. P. E. Monument, Sculpture not included	1	7,593.83
Aerodrome	1	9,800.00
Steam, Gas and Fuel Building (Boiler House)	1	135,480.00
Band Stands	7	24,850.00
Barracks for Jefferson Guards	1	11,000.00
Barracks for Militia	3	10,092.75
Barracks for United States Marine Corps	1	3,800.00
Blacksmith Shop	1	.....
Coal Chute	1	.....
Emergency Hospital	1	16,722.18
Garbage Crematory (the apparatus proper was obtained on exhibit basis)	1	12,895.90
Fire Engine Houses	5	52,965.00
Foundry Exhibit (by the Exposition, \$7,500; by subscription, \$800.00)	1	8,300.00
Harness Shop	1	985.00
Intramural Car Barns	2	6,253.00
Intramural Railway Stations	21	77,743.86
Roundhouse, World's Fair Terminal	1	27.00
Refrigeration and Ice Plant, Buildings only	2	18,184.00
Landscape Department:		
Office	1	.....
Tool House	1	1,500.00
Palm House	1	.....
Greenhouses (Leased)	7	.....
Mess Hall, Jefferson Guards	1	1,000.00
Metal Pavilion (by subscription, 5,300.00; by Exposition, \$4,200.00)	1	9,500.00
Police Station	1	6,646.17
Press Building	1	4,377.50
Pump Pavilion and Service Pavilion	2	10,198.20

LOUISIANA PURCHASE EXPOSITION

Designation of building or structure	Number of Buildings.	Cost
Stables:	6	\$ 5,630.00
Ambulance		
Exposition Stables		
Other Stables		
Toilet Room Buildings (Plumbing not included)	22	34,491.20
Town Hall, Model Street	1	15,398.34
Warehouses, Department of Civil Engineering	2	500.00
Warehouses, Department of Mechanical Engineering	1	2,750.00
Warehouse, Express	2	20,4274.00
Warehouse, Freight	1	3,884.00
Woman's Anchorage Building, Temporary Hospital	1	1,016.30
Total	253	\$7,405,629.68

National Buildings:

Government	Number	Cost
Argentina	1	\$ 10,000.00
Austria	1	80,000.00
Belgium	1	75,000.00
Brazil	1	130,000.00
Canada	1	30,000.00
Ceylon	1	35,000.00
China	4	50,000.00
Cuba	1	31,364.00
France	1	140,222.00
Germany	2	276,073.00
Great Britain	1	125,000.00
Guatemala	1	5,000.00
Holland	1	5,000.00
India	1	20,500.00
Italy	1	40,000.00
Japan	8	80,000.00
Mexico	1	12,000.00
Nicaragua	1	20,000.00
Persia (Varied Industries Court)	1	12,000.00
Siam	1	10,000.00
Sweden	1	1,7018.00
United States Government	1	355,000.00
United States Fisheries	1	45,000.00
Total	34	\$ 1,585,955.00

State, Territorial and Municipal Buildings:

State, Territory, or City	Number	Cost
Arkansas	1	\$ 19,944.00
California	1	17,000.00
Alaska	1	14,953.00
Arizona	1	4,172.00
Connecticut	1	31,001.00
Georgia	1	18,100.00
Illinois	1	80,000.00
Idaho	1	6,964.00
Indiana	1	50,000.00
Indian Territory	1	16,340.00
Iowa	1	43,995.00
Kansas City Casino	1	19,000.00

CONSTRUCTION

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State, Territory, or City	Number	Cost
Kansas.....	1	\$ 31,500.00
Kentucky	1	33,690.00
Louisiana	1	25,000.00
Maine	1	25,000.00
Maryland	1	20,000.00
Massachusetts.....	1	21,000.00
Michigan.....	1	18,500.00
Minnesota.....	1	17,372.00
Mississippi.....	1	15,000.00
Missouri	1	162,429.00
Montana	1	20,000.00
Nevada	1	5,200.00
New Jersey	1	19,000.00
New York City	1	86,500.00
New Hampshire	1	5,000.00
New Mexico	1	7,000.00
New York	1	72,000.00
Ohio.....	1	33,881.00
Oklahoma.....	1	15,420.00
Oregon	1	10,000.00
Pennsylvania	1	74,600.00
Rhode Island.....	1	28,897.00
South Dakota	1	8,000.00
St. Paul and Minneapolis	1	12,000.00
San Francisco.....	1	23,000.00
Texas.....	1	45,562.00
Tennessee.....	1	18,000.00
Utah.....	1	6,500.00
Virginia	1	18,500.00
Washington	1	32,000.00
West Virginia	1	22,306.00
Wisconsin	1	14,750.00
Vermont.....	1	5,000.00
Total.....	45	\$ 1,269,076.00

Philippine Buildings and Structures:

Designation	Number	Designation	Number
Administration	1	Public Comfort.....	1
Agriculture	1	Quartel	1
Band Stand.....	1	Restaurants.....	2
Bridge of Spain	1	School Building	1
Commerce	1	Scouts Camp.....	8
Education	1	Theatre	1
Ethnology	1	Hospital.....	1
Forestry	1	Fisheries	1
Government	1	Igorrote Village	13
Manila House	1	Walled City	1
Moro Village.....	19	Visayan Village	7
Mess Hall.....	1	Weather Bureau and Map	1
Negrito Village	12	Bogobo Village	10
Nipa Barracks	1		
Power House	1		92
Total for Philippine Buildings			\$613,418.44

Washington University Buildings Leased by the Exposition:

Designation	How Used by Exposition	Number
University Hall	Administration.....	1
Busch Hall.....	Division of Works	1
Cupples No. 1	Anthropological Exhibit	1
Cupples No. 2.....	Jefferson Guard Dormitories.....	1
Engineering Laboratory.....	Congresses	1
Library	Hall of Congresses.....	1
Physics.....	Board of Lady Managers	1
Power House.....	Power Plant	1
Dormitory.....	Dormitories	1
Liggett Hall	Dormitories	1
Gymnasium.....	Physical Culture.....	1
Stadium.....	Stadium.....	1
Observatory.....		
Total.....		13
Cost of the University Buildings.....		\$1,378,000 00

Miscellaneous Exhibit and Other Buildings:

Designation	Number	Cost
Aerial Wire Rope Tramway.....	3	\$2,000.00
American Portable House Company.....	1	200.00
Aeromotor Company	1	12,000.00
Acetylene Generator Holder	1	1,500.00
Bank	1	14,800.00
Brazilian Pavilion (Varied industries Court).....	1	17,000.00
Cook & Sons (Tents)	4	200.00
California Mining Exhibit (Mining Gulch)	1	1,500.00
Cahokia Court House	1	1,500.00
Christian Endeavor Pavilion	1	1,000.00
Canadian Forestry Pavilion.....	1	3,000.00
Disciples of Christ	1	7,000.00
DeLaval Steam Turbine Co.....	1	1,200.00
Express Office	1	10,000.00
Ethnological Exhibits (Indian School).....	1	25,000.00
Floral Clock House.....	1	1,500.00
French Pavilion (Manufactures Court)	1	12,000.00
Guild Hall (Scranton Correspondence School)	1	12,500.00
House of Hoo Hoo.....	1	30,000.00
Hanley-Casey Company (Offices, etc.)	3	5,700.00
Keystone Drilling Exhibit (Mining Gulch).....	4	3,600.00
Liquid Air Exhibit (British Royal Commission)	1	1,000.00
Model Playground.....	4	15,000.00
Model Rural School House	1	2,000.00
Missouri Mining Exhibit (Mining Gulch)	2	4,500.00
Mining Gulch Railway Station (Mining Gulch)	1	365.00
Missouri Fire Brick Company (Mining Gulch)	1	500.00
New Jersey Road Exhibit	1	1,000.00
Normandin Cement Block Machine Co. (Mining Gulch)	1	300.00
Palmer Hollow Building Block Company.....	1	500.00
Photoscope Warehouse	1	600.00

CONSTRUCTION

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Designation	Number	Cost
Paine's Fireworks, Workshop.....	1	\$ 1,000.00
Paine's Fireworks, Magazine.....	1	500.00
Portland Cement Exhibit (Mining Gulch).....	1	18,500.00
Royal German Railway Exhibit.....	4	8,000.00
Sunnybrook Distillery.....	1	30,000.00
South Dakota Black Hills Reduction Plant (Mining Gulch).....	1	2,500.00
Swedenborgian Church	1	4,500.00
Sun's Rays	1	8,000.00
Star Drilling Machine Company (Mining Gulch)	1	550.00
St. Louis Well Machine and Tool Co. (Mining Gulch).....	1	300.00
Swiss Pavilion (Varied industries Court)	1	10,000.00
Southwest German States Pavilion (Varied industries Court)	1	15,000.00
Temple of Fraternity	1	65,000.00
Travelers' Protective Association	1	12,000.00
United States Government Life Saving Exhibit.....	1	7,000.00
United States War and Field Hospital	1	1,000.00
United States Bird cage.....	1	30,000.00
United States Government Fuel Testing Plant (Mining Gulch)	4	11,000.00
United States Government Timber Testing Plant (Mining Gulch)....	2	2,500.00
Weller Pottery Exhibit (Mining Gulch)	1	8,500.00
Winget Machine Company (Mining Gulch)	1	1,000.00
Total.....	74	\$ 415,715.00

Concession Buildings and Structures:

Designation	Number	Cost
Anthracite Coal Mine (Mining Gulch).....	1	\$ 43,000.00
American Pop Corn Concession Company	1	12,000.00
Ancient Rome	6	65,500.00
Administration Restaurant.....	1	18,000.00
American Inn.....	1	20,000.00
Automobile Charging Station.....	1	4,500.00
Arizona Mining Camp (Mining Gulch)	10	25,000.00
Aztec Metallurgical Exhibit (Mining Gulch)	1	1,500.00
Blatz Pavilion Restaurant and Cafe	1	9,500.00
Burn's Cottage.....	1	2,500.00
Barrios Diamond Palace.....	1	6,500.00
Battle Abbey.....	1	62,000.00
Benguia Palace of Ancient Art	1	11,500.00
Bird Cage Cafe	1	10,000.00
Behnke & Willmann Restaurant	1	8,600.00
Bungalow Restaurant.....	1	7,800.00
Bohemia Cafe.....	1	16,000.00
Barbecue Pavilions	5	19,000.00
Barbecue Supply Station.....	1	6,000.00
Crystal Cafe	1	12,442.00
Crystal Cave.....	1	3,500.00
Clarksville Cider Company, Office	1	3,800.00
Clarksville Cider Company, Booths	9	1,250.00
Camera Obscura.....	1	1,000.00
Cairo Streets.....	18	90,000.00
Creation	1	80,000.00
Clarkson Concession Company.....	3	4,200.00

Designation	Number	Cost
Cummins Wild West.....	6	\$ 20,000.00
Chinese Village	6	55,000.00
Constantinople	6	25,000.00
Cliff Dwellers	12	35,500.00
Circle Swing	1	7,500.00
Cycle Circle.....	1	1,500.00
Deep Sea Diving	1	6,000.00
Dairy Lunch Company	4	12,000.00
DeForrest Wireless Telegraph Company	3	100,000.00
Drug Store	1	5,250.00
Esquimaux Village	5	17,300.00
Exposition Water Company, Booths.....	10	6,330.00
Exposition Water Company, Tanks and Office.....	5	5,000.00
Falstaff Inn	1	20,000.00
Fairy Floss.....	1	1,500.00
Fair Japan	10	65,000.00
Fleischmann Restaurant.....	1	21,500.00
Fire Proofing Company	1	1,500.00
Fiorita Fruit Company , Booths.....	14	2,800.00
General Service Company - Stables.....	3	14,000.00
Bonded Warehouse.....	1	13,000.00
Packing Case Warehouse	4	14,000.00
Glass Weavers	1	7,500.00
Golden Chariots.....	1	10,000.00
Galveston Flood.....	1	24,500.00
Grant's Log Cabin and Restaurant	2	5,000.00
German Tyrolean Alps.....	21	750,000.00
German Restaurant.....	1	40,000.00
Government Restaurant, Firmin Michael.....	1	5,250.00
Home Restaurant.....	1	5,000.00
Hereafter.....	1	25,000.00
Hires' Root Beer, Booths	5	2,950.00
Hires' Root Beer, Laboratory.....	1	650.00
Hagenbeck's Trained Animals	5	68,000.00
Hunting in the Ozarks.....	1	2,000.00
Hale's Fire Fighting Exhibit.....	1	52,500.00
Helter-Skelter	1	1,000.00
Infant Incubators	1	31,000.00
Inside Inn	1	295,000.00
Indian Trading Store.....	1	700.00
International Doll Exhibit	1	2,855.00
Irish International Exhibition	6	105,000.00
Jim Key	1	12,000.00
Launch and Gondola Pavilions	9	7,200.00
Louisiana Cafe	1	750.00
Lincoln Exhibit.....	1	6,500.00
Mammoth Crystal Cave (Mining Gulch).....	1	10,000.00
Missouri Lead and Zinc Mine (Mining Gulch)	2	5,000.00
Mysterious Asia	8	103,000.00
Moorish Palace	1	38,000.00
Magic Whirlpool.....	1	29,800.00
Morocco Exhibit	8	25,000.00
Malto Grape Company, Pavilion	1	1,000.00
Nana	1	2,700.00

Designation	Number	Cost
New York to the North Pole and Ship	1	\$ 70,000.00
Naval Exhibit Company (Boats, about \$60,000, not included)	5	60,000.00
Nebraska Restaurant	1	6,500.00
Nuremburg Restaurant	1	5,530.00
New Jerusalem	50	285,000.00
Observation Wheel	1	175,000.00
Ostrich Farm	1	2,500.00
Old Plantation	1	20,000.00
On the Bowery	1	3,000.00
Old St. Louis	20	50,000.00
Official Guide	1	500.00
Orangeade Company, Booths	12	5,000.00
Official Photographer's Studio	1	9,600.00
Old Virginia Homestead	1	1,500.00
Palace of Dreams	1	6,000.00
Poultry Farm	11	10,000.00
Paris Amusement Company	4	35,000.00
Palais du Costume	1	28,000.00
Park View Catering Company	10	35,000.00
Parcel Checking Pavilion	1	500.00
Palm Cottage Restaurant	1	18,000.00
Porterfield Turquoise Mines Company (Mining Gulch)	1	1,000.00
Russian Village	6	14,000.00
Rice Kitchen	1	1,950.00
Siberian Railway	1	32,000.00
Siberian Restaurant	1	11,000.00
Statistcum	1	4,000.00
Spectatorium (Official Photographer)	1	27,100.00
Seville	4	27,000.00
Star Bottling Company's Booths	17	6,500.00
South African Boer War Exhibit Company	6	48,000.00
Solar Engine	1	5,000.00
Swedish Restaurant	1	8,000.00
Southern Home Kitchen	1	6,000.00
Tintype Booths	3	300.00
Temple of Mirth	1	5,000.00
Temple of Palmistry	1	7,287.00
Temple Restaurant	1	6,751.00
Thompson Scenic Railway	2	102,000.00
Under and Over the Sea	1	23,250.00
University Restaurant	1	14,800.00
Voney's Quick Meal Restaurant	1	9,500.00
Welch Grape Juice Company	1	5,000.00
Water Chutes	3	54,000.00
World's Fair Souvenir Company	2	3,000.00
World's Fair Janitoring and Cleaning Company	1	1,200.00
Total	448	\$ 3,919,425.00

The Exposition management was fortunate in that no serious delays were occasioned by labor troubles. Differences arose, many of them, with labor organizations, but these were adjusted. A clearly defined and liberal policy was adopted in the beginning and adhered to throughout by the Exposition. The wages paid the various classes of mechanical labor are given in the report of Director of Works Taylor, as follows:

Carpenters.....			55c	per	hour
Carpenters ' Helpers.....	35c	to	45c	"	"
Riggers.....	35c	to	55c	"	"
Bricklayers	65c	to	70c	"	"
Tinners			50c	"	"
Stonemasons.....			60c	"	"
Painters.....			50c	"	"
Decorators.....	50c	to	66¾c	"	"
Plumbers.....	62½c	to	70c	"	"
Plumbers' Helpers			37c	"	"
Glaziers.....			50c	"	"
Common Laborers.....	20c	to	25c	"	"
Roofers			50c	"	"
Plasterers.....	75c	to	87½c	"	"
Plasterers ' Helpers	50c	to	55c	"	"
Engineers (Road Rollers)			35c	"	"
Watchmen			25c	"	"
Wireman , Foreman.....			68¾c	"	"
Wiremen.....			62½c	"	"
Wiremen , Helpers.....			25c	"	"
Linemen			62½c	"	"
Linemen , Helpers			28⅛c	"	"
Concreters.....			37½c	"	"
Machinists.....			55c	"	"
Machinist Helpers			25c	"	"
Steam Fitters			68¾c	"	"
Steam Fitters, Helpers.....			37½c	"	"
Tinners			50c	"	"
Crane Operators.....			60c	"	"
Stationary Engineers.....	55c	to	62c	"	"
Iron Workers.....			55c	"	"
Iron Workers , Helpers.....			30c	"	"
Boiler Firemen			32½c	"	"
Engine Oilers.....			30c	"	"
Coal Passers			25c	"	"
Moulders in plaster.....	50c	to	\$1.00	"	"
Teams, including wagon and driver			50c	"	"

Two notable engineering feats were the construction of the wooden channel over the river through the World's Fair grounds and the raising of the sewage twenty-five feet to make connection with the city system. In his report to Director Taylor, the chief engineer, Richard H. Phillips, describes the treatment of the river as follows:

Owing to general overflows, which occurred at frequent intervals, it was necessary to treat the river channel not only in that portion of the grounds occupied by the exposition buildings, but in addition, that portion of the river east of the eastern boundary of the exposition grounds, to a point where the river passes out of Forest Park at its southern boundary.

The River des Peres is a small stream, traversing a valley for a distance of about twenty miles. The head of the stream is about seven miles northwest of Forrest Park; it passes through the western and southern portions of the city of St. Louis and discharges into the Mississippi River at the extreme southern portion of the city.

The drainage area of this river north of Forest Park is about 14,000 acres and it has a rapid runoff. This area is largely farm and pasture lands, with timber only in small tracts along the river and ravines.

The course of the river could not be changed enough to eliminate it entirely from the grounds; allowing it to remain inside the grounds necessitated its course being changed to such an extent that no complications would arise in the construction of exhibit palaces. This was accomplished by selecting a course through the principal streets alongside the main exhibit palaces. A straight course could not be strictly adhered to but was to such extent that no curves less than 400 feet radius were required and only three of these were necessary. By this change, the length of the river through the exposition grounds was made about one-half its original length, the length of the original channel being 8,800 feet and the new channel 4,656 feet.

The velocity obtained in the new channel was four times that in the old channel, due to the increased fall, a more smooth and even flow line and a more direct course.

The new channel was excavated forty-eight feet in width, with an average depth of approximately fifteen feet. The channel was excavated with vertical sides and perfectly flat bottom its entire width.

On account of this channel being in the principal streets, it was very necessary to have it covered the entire length; it was also necessary to protect the vertical sides from caving and the bottom from scouring.

The grade of the covering was made to conform with the street grade; the bottom was given a uniform grade from one end to the other, the total fall in this entire length being eight feet.

On account of the short length of time this structure would serve—a matter of four years—it was only necessary to build a very temporary conduit. This conduit was divided into three compartments, each fourteen feet three inches in width and from thirteen to sixteen feet in height in the clear.

This was a framed structure, built entirely of wood, having a system of floor joists for both bottom and top floors, and posts for sides and partitions. The floors and sides of the compartments were lined with dressed plank; piling was used only at railroad crossings and for bulkheads at each end of the structure.

This structure answered the purpose for which it was intended admirably, and cost complete, including excavation, \$125,000.00.

This was the first contract awarded by the Louisiana Purchase Exposition Company; it was signed January 6, 1902; work began January 7, 1902, and was completed May 30, 1902.

This system of construction was used for smaller conduits to carry the storm water through the grounds into the river. The next in size was eight feet by eight feet, the smallest size used being three feet by three feet seven inches; where it was necessary to use smaller drains, standard vitrified sewer pipe was laid in the usual manner.

Storm sewers were constructed in all portions of the grounds where it was not considered feasible to carry the storm water in gutter drains.

Private parties were required to connect roof and surface water drains to this system. These parties were required to take out a permit for each connection and pay to the management the sum of \$15.00 for inspecting and directing the work; also the sum of \$25.00 for the privilege of connecting to the trunk sewers.

One hundred and four private connections were made to this system by private parties, from which a revenue of \$4,190.00 was derived, \$30.00 of which was a charge for the inspection of some changes made by different parties.

In addition to the changing of the River des Peres within that portion of the Park used by the Exposition Company, it was necessary to do considerable work on the river from the eastern boundary of the exposition grounds to the southern boundary of Forest Park. This work consisted of straightening the original channel and removing obstruc-

tions.

Two new bridges were also constructed, one known as the "McKinley bridge," located immediately east of the exposition grounds; another near the Forest Park stables. The masonry bridge, constructed to carry the 30" city water main, immediately below Lafayette bridge, was removed entirely. The old Jefferson bridge was removed and was replaced by the Washington bridge, which had to be removed from the site of the Mines and Metallurgy building.

The masonry bridge, carrying the 30" city water main, was removed on account of being an obstruction to the flow in the river during the periods of high water. At such times it was necessary to have an opening of at least 600 square feet in area; this bridge was provided with three openings, having a total area of only 200 square feet; for this reason, this bridge acted as a dam, which resulted in the inundation of the river bottom lands quite a distance above the east boundary line of the exposition grounds.

The chief engineer, Mr. Phillips, in his report to Director Taylor, describes the solution of the sanitary problem as follows:

The River des Peres was the only gravity outlet for the system of sewers when the work of building the World's Fair begun. In this river, however, the flow of water was too small to carry so large an amount of polluted matter; therefore, it was necessary to consider other methods of disposal.

Upon investigation it was found the city sewer system could be reached at a distance of 3,550 feet from the outlet of this system, or about 1,000 feet north of the northeast corner of the grounds. At this point the flow line of the city sewer was 21.8 feet above the flow line of the Exposition Company's trunk sewer. This, of course, required lifting the sewage about twenty-five feet vertically, the bottom of the wells being about five feet below the sewer flow line, and forcing it through a pipe line 3,550 feet long.

For this work it was decided to install centrifugal pumps, the cost of which would be much less than the construction and operation of disposal works of any kind in use at that period.

A pumping station was built at the west end of the Mines and Metallurgy building. The building was constructed of wood and staff, having a basement below and one story above ground. This building was sixty feet long and sixteen feet wide; it was placed immediately over and supported by the walls of two sewage wells, each fifteen feet inside diameter and twenty-two feet deep, the elevation of the basement floor of this building being sixty.

The walls of the wells were constructed of brick, laid in cement mortar and plastered on the inside with cement mortar, to make them perfectly water tight. The bottoms of the wells were made of concrete, fifteen inches in depth.

The bottom of the wells was put down to an elevation of thirty-seven feet; the elevation of the sewer line flow was 42.8 feet; the bottom of the wells was placed below the sewer flow line in order that the pumps could be run submerged.

Four Worthington centrifugal pumps were used to pump the sewage and were set on the concrete floors of the wells, each pump having a rated capacity of 3,000 gallons per minute, pumping against a head of seventy-five feet, with a velocity of 480 R. P. M.

Each pump was direct connected by vertical shafts, with a seventy-five horsepower Westinghouse A. C. Induction motor, the motors being set twenty-three feet above the pumps and on the basement floor.

The power necessary to run this plant was obtained from the Exposition Company's power plant in the Machinery building. Current was delivered to the Mines and Metal-

lurgy building at 6,600 volts and was transformed here and delivered to the motors at 110 volts.

The pumps and motors were furnished this department by the mechanical and electrical department.

The 12" suction of each pump was carried down into a pump in the bottom of the well, taking sewage direct from the well. The 12" discharge of each pump was connected direct to the 24" discharge running from the pumping station to the city sewer. This line was 3,550 feet long, having only slight vertical and horizontal curves. This pipe line was constructed of lightweight cast iron pipe, the joints being made with lead and oakum.

The trunk sewers of this system were constructed much larger than necessary, because the city of St. Louis required a certain portion of this work be done in such manner that it would be permanent and later could be used by the city and connected up as a part of the city system. The difference in size required by the city and the size necessary is as follows:

<i>Required by City of St. Louis</i>					<i>Necessary for Exposition Company's Use</i>				
1,933	feet	48"	brick	sewer	1,933	feet	24"	vitrified	pipe sewer.
930	"	48"	"	"	930	"	12"	"	"
1,024	"	27"	vitrified	pipe sewer	1,024	"	18"	"	"
1,212	"	21"	"	"	1,212	"	12"	"	"
1,040	"	15"	"	"	1,040	"	12"	"	"

This required the expenditure of \$13,900.25 more than was necessary to the Exposition on account of the city requirements.

The system of trunk lines was laid generally on the streets; only in a few cases was this not so, viz.: Under the Education, Electricity and Transportation exhibit palaces.

All of the exhibit palaces were provided with small laterals, which were laid under the building floors in order to take the sewage from exhibitors' booths.

In the plateau of states and foreign section only trunk sewers were constructed by the Exposition Company, each state and foreign building being required to construct the lateral from its building to the trunk sewer; in no case did any lateral exceed 300 feet in length.

The trunk sewer for the "Pike" was laid in the center of the street and laterals were laid to the building line of each concession by the Exposition Company before the street was paved, so the paving would not be interfered with when connections were to be made. Concessionaires were required to connect to these laterals at a point where they entered their allotted space.

Certain sewers were constructed on the property west of Skinker Road when the same was acquired by the Exposition Company. The Washington University had a system, complete, for their buildings, which was later connected to the Exposition Company's system. About 7,000 feet of 6" to 12" vitrified sewer pipe was laid in this system when the company acquired this tract.

A storm sewer along the Chouteau Avenue street railway was already in place when the tract west of the Park was acquired, of which 2,480 feet was brick, from 36" to 48" in diameter, and 1,285 feet was vitrified sewer pipe, from 18" to 30" in diameter. This was connected to the Exposition Company's sanitary sewer system and used as a sanitary sewer, all of the storm connections previously made to this sewer being turned into Arrow Head Lake. This sewer served as a trunk sewer for the Agriculture and Horticulture exhibit palaces, the stock exhibit and a portion of the Philippine Reservation.

Two-ring brick manholes, 24" inside diameter at the top and three feet by four feet, elliptical, at the bottom, were constructed on all sanitary sewers inside Forest Park; on all other sanitary sewers constructed by the Exposition Company, wooden manholes

were used. These manholes were made of two-inch plank, being two feet square at the top and four feet square at the bottom, having bottoms made of concrete. The covers for all manholes were made of cast iron.

No very difficult work was encountered in the construction of this system of sewers. The trenches were excavated without caving to any great extent and very little bracing was required, except at points where fills of considerable depth were made before sewers were constructed.

Ground water interfered with construction very little, although the flow line of the main trunk sewer was from three to five feet below the original flow line of River des Peres.

The original river was crossed seven times at an elevation below its flow line. No special work was constructed at these crossings, as the old river channel was filled soon after sewers were constructed. It was necessary to cross the new channel of River des Peres with two sewer lines, one of which was of such depth that the crossing was made with cast iron pipe below the flow line of the river; for the other crossing, it was necessary to construct an inverted siphon of 8" cast iron pipe, under and across the channel. This was on a small trunk line which accommodated the Model City and vicinity.

Private parties, such as state, foreign and concessions, were required to connect all pipe carrying foul water or waste, to the sanitary sewers. For each connection they were required to pay a fee of \$10.00 for the privilege of connection and an additional fee of \$10.00 for the inspection and direction of the work. The revenue derived from this source amounted to \$6,890.00. Three hundred and twenty-four connections were made by private parties, two of which were made by hotels located outside the grounds. One hundred and fifty dollars was charges in one case, \$300.00 in the other, in order to cover the cost of pumping.

The sewage pumps were kept running continuously day and night, records being kept showing the amount of sewage pumped each day. Taking a number of days of average attendance, the amount of sewage pumped equaled twenty-eight gallons per capita per diem; two gallons of this amount was ground water, as shown by measurement where no connections were in use.

The consumption of water per capita, as shown by meters on days mentioned above, exceeded the amount of sewage pumped per capita by twenty-five gallons, i.e., 51 per cent of all water consumed on the grounds reached the sewers.

CHAPTER XII

PRESIDENT FRANCIS ABROAD

An Exploitation Mission Extraordinary—The Tour of Europe in Nineteen Days—Notable Receptions in England, France, Spain, Germany and Belgium—Encouraging interviews with King Edward, President Loubet, Emperor William and King Leopold—A Turning Point in Foreign Participation.

BRIEF reference has been made elsewhere to the visit abroad by the President of the Exposition in February and March 1903. While on ship-board, returning from this "Tour of Europe in Nineteen Days," as it was called at the time, the President prepared a narrative report which, upon his arrival home was submitted to the Board of Directors of the Exposition. From that narrative the following extracts are taken:

Where the personal pronoun "I" is used in this report in lieu of the "President of the Louisiana Purchase Exposition," it is done to save time, space and labor, as in no instance have I been mislead into the belief that the attention shown me and the distinction conferred were personal and not intended for the accredited representative and highest official of an enterprise which has been recognized and substantially aided by the United States Government, by the city of St. Louis, by the State of Missouri, and many other states of the American Union, and which includes in the scope of its activity every civilized people and every organized government on the earth.

It was with much reluctance and many misgivings that I decided to accept the invitation of the American Society in London to attend its 22nd of February dinner. I was not inappreciative of the compliment nor of the possible benefit to the Exposition from an acceptance of the invitation, but while fearing that my absence from the field of local preparation might impede the progress of that all-important work, I contemplated with great trepidation the presentation of the Exposition's claims by its highest official in foreign countries. I realized that the failure of such a movement, if not fatal to the participation of other countries in the Exposition, would certainly handicap our efforts in that direction, and give to them such a setback as would require the concentrated co-operation in the foreign field on the part of every division of the company's organization, and active if not aggressive aid on the part of the federal government.

After careful consideration of all the conditions, the Executive Committee and myself agreed that the invitation of the American Society should be declined, and on February let a cable communication to that effect was sent to the officers of the society. The reply was a protest, based upon the incontrovertible statement that the President of the Exposition had some weeks, or months previous, announced his willingness to accept the invitation, and in accordance therewith many officials and representative men of the British Empire had accepted an invitation to meet him on the occasion named. Correspondence by cable was kept up until February 9th, when the receipt of a cablegram from the American ambassador in London to the effect that the interests of the

Exposition demanded that its President accept the invitation left no room for further argument, especially as the time between the receipt of the ambassador's cablegram and the date of the dinner was so short that there was only one vessel leaving an Atlantic seaport by which a passenger could safely be transported so as to reach London in time for the dinner. Consequently, I left St. Louis at 1:00 p. m., February 10th, just two and a half hours before the time fixed for the February meeting of your honorable board. I was accompanied only by my secretary, Collins Thompson.

On my arrival at New York I was met by Honorable Rolla Wells, mayor of St. Louis, and by three other Directors of the company, James Campbell, Julius S. Walsh and B. F. Yoakum, all of whom bade me godspeed. I cleared on the morning of February 12th, on the French steamer *La Bretagne*, for Havre, France. Mayor Wells, with his accustomed and thoughtful kindness, accompanied me to the pier at the foot of Tenth Street, and waved bon voyage as long as a human form could be distinguished on the shore.

The voyage was rough and stormy, but otherwise uneventful. The ship landed at Havre about 7:00 o'clock on the evening of February 20th.

England:

Before leaving St. Louis I had cabled the London representative of the Exposition, George F. Parker, directing that all of our European representatives meet me in London for report and personal conference. At Havre I was met by Mr. Parker himself, and by Palmer L. Bowen, who for fifteen months past had been doing exploitation work in France and Switzerland. From Havre I sailed for Southampton at midnight, February 20th, and leaving Southampton at 8 o'clock on the morning of February 21st, arrived in London at 11:00. While at Havre I was honored by a call from the American consul, Mr. Thackara, and his wife, who is a daughter of the late General Sherman. Mr. Thackara evinced great interest in the Exposition and showed familiarity with its scope and the progress made in the work of preparation, but at the same time he expressed regret that the people of Havre and of the remainder of France were not taking more active steps for participation.

On arrival in London I was met by our European commissioner, Thomas W. Cridler; by Miss Hayward, who, since November 1902, had been performing intelligent and effective work for the Exposition in London; by Halsey C. Ives, chief of the department of Art, who, since June 1902, had been employed in arousing an interest in the Exposition throughout art circles in Europe; by Joseph Brucker, the Exposition's representative in Berlin; by John Barrett, commissioner-general to Asia for the Exposition, who was en route from India to St. Louis; by R. Newton Crane, formerly a resident of St. Louis, and by F. C. Van Duzer, secretary of the American Society in London. Apartments had been engaged at Claridges hotel, on Brooks Street. On my arrival there I received a message from the American ambassador inviting me to lunch with him at the Carlton at 1:00 o'clock. At 12:30 I paid my respects to the embassy, and, accompanied by the ambassador, proceeded thence to the luncheon. My reception by the ambassador, by the secretary of the embassy, Henry White, and by all of the attaches of the embassy was most cordial, and during my entire stay in London the ambassador and all of his staff spared no effort to promote the interests of the Exposition and the object of my visit.

The afternoon was spent in discussing the status of the Exposition in the United Kingdom with the American ambassador and the attaches of the embassy, and the progress of the work in Europe, with the above-named representatives of the Exposition. During the evening calls were made by United States Consul-General Evans, by James C. Stewart, a St. Louisan, who for two years past had made for himself an enviable reputation in England and throughout Europe by his work for the Westinghouse Company and the Northwestern Railroad.

The forenoon of Sunday was consumed by interviews with the *American Associated Press*, the *London Chronicle*, the *London Express*, the *Saint James Gazette*, and

other English newspapers. In the afternoon I accompanied Newton Crane to a tea at the house of Lady Barrington, the wife of Sir Eric Barrington, long and favorably connected with the English foreign office and the secretary who has charge of the correspondence of the foreign minister. Lady Barrington talked freely about the Exposition, having had frequent calls from Miss Hayward, who had inspired her with a deep interest in the undertaking.

At 8:00 o'clock Sunday evening I was principal guest at a dinner given by James C. Stewart at the Carlton. The dinner was attended by the American ambassador; by Lord Grey, one of the executors of the will of Cecil Rhodes; by General Sir Ian Hamilton, who gained distinction in the Boer War; by Admiral Sir John Fisher, of the British Navy; by Moberly Bell, publisher of the London Times; by Sir Clinton Dawkins, the London partner of J. Pierpont Morgan; by the Rt. Hon. Sir Joseph Dinsdale, ex-Lord Mayor of London; by Prince Radziwill; by Baron Gravenitz, of the Belgian legation; by the Rt. Hon. Arnold Morley; by Sir Ernest Paget, president of the London & North western railroad; by Arnold Hill, Bax Ironsides, Fletcher Moulton, Paul May, Colonel Craddock, Sir Astley Corbett, Newton Crane, and others - a distinguished assemblage, whose presence was not only a compliment to your President, but to Mr. Stewart as well. The main topic of conversation at this function, as it was at practically every one I attended, was the Universal Exposition of 1904 to be held at St. Louis.

On Monday, February 23rd, I was presented by Ambassador Choate to the King of England at a levee which was attended by Prime Minister Balfour and all the officials of the government, by Lord Roberts, Admiral Fisher, and by many of the highest officers of the British army and navy, by the foreign ambassadors and ministers, and by a large number of representative men of the British Empire. At the levee I was introduced to Lord Lansdowne, Lord Londonderry, and several other officers of the government, all of whom expressed interest in the Exposition. In the afternoon I attended a session of the English Parliament, accompanied by Henry White. The subject under consideration was the army bill, discussion of which was highly interesting. During my stay in the diplomatic gallery from 3:30 until 6:00 p.m. I heard speeches made by Mr. Broderick, secretary of war; by Sir Charles Dilke, and others.

The dinner of the American Society was on the evening of February 23rd, at the Hotel Cecil. There were over 400 plates. The chairman was D. C. Haldeman, president of the American Society in London. The menu of the dinner and the seating of the guests are shown as part of this report. The American ambassador occupied the seat of honor on the right of the president, the Duke of Devonshire was on his left, and I was located between the Duke of Devonshire and the Lord Mayor of London. After a few words of introduction by the chairman, and a toast to the King of England and the President of the United States, the latter being responded to by the Duke of Devonshire, whose remarks made a profound impression, not only upon the company assembled, but also upon the entire English people, the American ambassador proposed the sentiment, "The Louisiana Purchase Exposition," and after a speech of about twenty minutes introduced me to make the response. My reply was thirty minutes in duration, and appeared to be well received by the assembled company. John Barrett, the Exposition's commissioner-general to Asia, then proposed the success of the exhibit of the United Kingdom at St. Louis in 1904, in a speech of about ten minutes, which was responded to by Lord Londonderry, a member of the English government and president of its board of education, and by Sir Edward Poynter, president of the Royal Academy, after which speeches were made on the subject of the "World-Wide Effects of International Exhibitions," by the Lord Provost of Glasgow, Sir E. H. Carbutt, Bart, and E. H. Holland, M. P. This completed the regular program of the evening. The impromptu proceedings consisted of felicitations of the American Society by its secretary, Mr. Van Duzer, and by its president, Mr. Haldeman.

On February 24th I lunched with Lord Grey, Dr. Jameson, of Johannesburg fame, and other representatives of the government of Rhodesia.

During the forenoon I was honored by a call from Sir James Dredge, publisher and editor of *Engineering*, a well-known English journal, which has for months past taken

great interest in the Exposition, as shown by its columns; he was a member of the British commission at the Chicago Exposition of 1893, and at several other expositions where England has made exhibits.

The afternoon was consumed by conferences with the Exposition representatives, and by calls from Ambassador Choate, Secretary White and others. In the evening I dined with Melville E. Stone, manager of the Associated Press of the United States, who had journeyed from Berlin to London to meet me and to attend the dinner of the preceding evening. In this connection I take pleasure in testifying to the unfailing and very helpful assistance extended to me in my mission by Mr. Stone and by all of the representatives of the American Associated Press throughout Europe.

While at King Edward's levee on February 23rd, Lord Knollys, private secretary of the King, had asked the secretary of embassy, Henry White, whether I desired a private audience with the King, and, of course, had been answered in the affirmative. The audience was fixed for noon on February 26th, and at the time appointed I proceeded to Buckingham Palace, accompanied by the American ambassador. King Edward received us in his private apartments, and after a very gracious welcome, characterized by a hearty shake of the hand, invited us to be seated. The conversation had not proceeded many minutes before the King, whom courtesy permits to introduce subjects in conversation as well as to terminate all interviews, spoke of the Exposition, and almost immediately thereafter voluntarily stated that he had decided to tender the Jubilee presents of Queen Victoria for exhibit at St. Louis in 1904, if agreeable to the Exposition authorities. My reply was to the effect that the exhibition of such treasures would not only be agreeable but would be considered a great honor by the Exposition Company, and would undoubtedly be viewed with great interest by its millions of visitors whose number would no doubt be increased by this very distinguished mark of kindness on the part of His Majesty. He stated that expressions of good-will and admiration for his respected mother on the part of the American people had led him to believe that such an exhibit would be appreciated, and after confirmation of that belief he would himself select such of the gifts as he thought would be most interesting, and direct that they be sent to the Exposition.

The audience lasted about thirty minutes, and as is customary, was terminated by the King. It was characterized by expressions of the conviction that the Exposition would be highly successful, and by assurances of friendly feeling toward the people and the government of the United States. The replies made by myself to the effect that the success of the Exposition would be greatly promoted by the distinction he had conferred upon it by the tender of the gifts of Queen Victoria's Jubilee presents for exhibit, and by a general participation in the Exposition on the part of the English people were considerably received by the King, and when I gave utterance to the hope that a royal commission would be appointed, the King stated that Lord Lansdowne had that matter in charge. Thereupon I presumed to suggest that the naming of a member of the royal family as honorary chairman of the commission would not only enhance its influence but be highly appreciated by the government of the United States and by the exposition management. To that suggestion he made no reply beyond saying, with manifest good feeling, that he would take it under consideration. He authorized me to inform Lord Lansdowne of his tender of the Jubilee presents, expressed sincere gratification at the call, and impressed me throughout the duration of the audience as a ruler who is sincerely desirous to promote the welfare of his people, and as worthy of the esteem and respect in which he is held by the subjects of a limited monarchy.

It may be of interest to learn that upon my individual responsibility, I took pleasure in informing King Edward that the people of our country heartily reciprocate the friendly sentiments which he had said were cherished for them by the people of the United Kingdom, as well as by himself.

The effect of this private audience and of the good-will toward the Exposition, indicated by the King of England, through the tender of the Jubilee presents of Queen Victoria, was impressive and widespread, and was not confined to Great Britain, but extended

to all of the British Colonies, and was not without influence on other nations of Europe. No statement from the English King could have been more helpful, coming as it did at a time when European interest in the Exposition seemed lukewarm, if not indifferent.

The tender of the Jubilee presents for exhibit was spontaneous on the part of the King, and Lord Lansdowne, in a subsequent conversation on the subject, seemed desirous that the offering should be considered wholly voluntary, and without suggestion from any other source.

Upon leaving Buckingham Palace I proceeded to the Mansion House to attend a luncheon of the Lord Mayor of London, who had extended the invitation to me at the American Society dinner of February 23rd. The seat of honor to the right of the Lord Mayor was occupied by the Countess Howe, the same who was so active in sending a shipload of supplies to the sick and wounded during the South African war. I was placed at her right, and to my right was Lieutenant-General Sir John French. Among the other guests at the luncheon were Lord Charles Beresford, General Sir George White, Sir A. Conan Doyle, Sir Fred. Treves, Bt., and twelve or fifteen other distinguished citizens of London.

The afternoon of the day was passed at my rooms receiving calls and conferring with the European representatives of the Exposition.

In the evening I was the guest at a dinner given by Edward Gifford, a former resident of St. Louis, and son-in-law of the Earl of Halsbury, lord chancellor of England, who was invited to meet me. Edward Gifford has many friends in St. Louis who will remember him with pleasure, and they will all be pleased to learn that he continues to take a deep interest in everything that pertains to the welfare of the city, especially the success of the Exposition.

On Thursday, February 26th, I attended a luncheon at Lansdowne House as the guest of Lord Lansdowne, the foreign minister, where were present Lady Lansdowne, her brother, Lord Aberdeen, and other members of the family. The main topic of conversation was the St. Louis Exposition, which the ladies especially expressed an earnest desire to attend.

In the evening I was given a dinner by Mrs. Ronalds at her residence. Signor Marconi, Colonel Hunsicker, the London representative of the United States Steel Corporation, and Mr. and Mrs. Blow, of Virginia (Mr. Blow is a mining engineer who has large interests in South Africa), and several other Americans were among the guests. The Exposition was again the main subject of conversation and every opportunity was taken advantage of to make known its character and scope.

On February 27th I was invited to lunch at the Carlton by the American ambassador, the other guests being Sir Edward Poynter, president of the Royal Academy, and Sir Gilbert Parker, M. P., author of "The Right of Way," "Seats of the Mighty," and other well-known works of fiction highly appreciated by American readers. In the afternoon I returned a call which had been made by Lord Peel, who was said to have been selected by Lord Lansdowne as chairman of the English commission. Lord Peel was for six years Speaker of the English House of Commons, is a man of high character, acknowledged ability, and is universally respected in England. He manifested a desire for information concerning the Exposition, and seemed imbued with a determination to make the English exhibit a credit to his country, and abreast of that of any other nation. I made engagements with him to receive Professor Ives and Lieutenant Carden; the latter had for nine months past been doing most excellent work for the machinery department of the Exposition, and had come to London to meet me in accordance with my request. I also called on W. T. Stead, publisher of the *Review of Reviews*, in response to his invitation which stated in his terse style: "Now that you have been received by the King in private audience, I trust you may have some time to devote to his subjects." Mr. Stead was apparently willing, if not anxious, to learn all he could about the Exposition, and I was glad to avail myself of an opportunity to impart all possible information to a man of such acknowledged ability and such extensive influence.

The remainder of Friday until after midnight was passed in conference with the exposition representatives, and in planning a new campaign for foreign exploitation.

It was decided that Mr. Cridler should proceed at once to St. Petersburg, Ambassador McCormick having twice written me at London of his great anxiety concerning the inclination and intentions of the Russian government.

Charles W. Kohlsaas and Hawkins Taylor, who had previously been accompanying Mr. Cridler, were directed to go to Stockholm, Sweden, and to Cairo, Egypt, respectively. Miss Hayward was permitted to remain two months longer in London, before the expiration of which period she will probably be assigned to another field, where it is hoped she will accomplish as much as she has in London, and if so, it will result in great benefit to the Exposition.

Mr. Bowen was directed to remain in Switzerland until the government of that country took favorable action concerning participation in the Exposition, which it was hoped would be within a few weeks. Thereupon he will proceed to India to continue the work begun by John Barrett. This field is a very important one, and so extensive that it will require very painstaking and persistent labor.

Professor Ives and Lieutenant Carden, both of whom have been performing most satisfactory work under the guidance of the Division of Exhibits, will continue their work until I return to St. Louis and confer with Director of Exhibits Skiff. These gentlemen have been devoting their time to exhibitors, rather than to the governments of the countries, and after viewing the field and the effect of our foreign work, I have come to the conclusion that in most cases, if not in all, the wisest policy is to begin by interesting the people or the exhibitors, as their influence must be exercised upon the government before a formal acceptance of the invitation to participate in the Exposition can be made. Belgium and Holland, through their respective foreign offices, at first courteously declined to accept our invitation, but subsequently, through the influence of their artists and manufacturers, reconsidered, and are now classed among the countries that will participate in the Exposition.

The intelligent labors of Lieutenant Carden have been very fruitful for the exposition power plant, as well as in moving manufacturers to prepare exhibits.

When conditions at Stockholm will admit of Mr. Kohlsaas leaving that field he will proceed to Austria, which country has as yet made no reply to our invitation, and whose people seem loth to exhibit their products in America. Russia and Austria appear to be the countries where it is advisable our most energetic efforts shall be put forth.

I neglected to mention that Chevalier Vittorio Zeggio, who for a year past had been the Exposition's commissioner in Italy, arrived in London, February 22d, attended the dinner of the American Society, and was present at all the conferences of the exposition officials. Mr. Zeggio's work from the beginning has been characterized by industry and good judgment, and by an earnest desire to secure the participation of that country, which very soon after the receipt of its invitation forwarded through the state department at Washington its reply declining to participate. A reconsideration brought about by Mr. Zeggio met with the same fate, but not discouraged, he has repeated his efforts, and my latest advices from him are to the effect that the acceptance of Italy is only a question of time.

Mr. Parker was directed to remain in London for the present, and to continue his work under the guidance of the commission to be appointed, and the same order was given to Mr. Brucker concerning Germany, his retention having been requested by Dr. Theodor Lewald, the imperial commissioner-general of Germany.

Mr. Barrett, after remaining in London a few days to recuperate from his labors through China, Japan, Siam and India, is to report at St. Louis, and go thence to New Zealand and from there to Australia. His work up to this time has been satisfactory and effective.

Albert E. Stiasny, who has recently been sent to Austria to do exploitation work

among the manufacturers of that country, with whom he has an acquaintance, was not directed to meet me in London, but was ordered to continue his work in Austria in the hope of interesting probable exhibitors, to the end that they might induce the government to formally accept the invitation to participate in the Exposition.

On Saturday, February 28th, I had a conference with Colonel Watson, who it was said would be appointed secretary of the English commission, and who proposed to visit St. Louis during the coming months.

It had been my intention to return to America direct from London, sailing on February 28th, but having received two or more urgent requests to visit France from Michel Lagrave, the commissioner-general to the Exposition from that country, and having been informed by M. E. Stone that Ambassador Porter at Paris had expressed the opinion that it would be a mistake for the President of the Exposition to visit England and return to America without paying his respects to France and Germany, which countries had accepted the invitation, and were making active preparations to participate, and having been advised from St. Louis that the Spanish minister at Washington had visited the Exposition, and had expressed an opinion to the effect that it would be impolitic for the President of the Exposition to go to the Continent without visiting Spain, I cabled to the Executive Committee asking information as to the progress at home, and requesting advice as to the advisability of my making a hurried visit to Paris, Madrid and Berlin. On Saturday, February 28th, while awaiting a reply to this inquiry, I entertained the American ambassador at luncheon, had a thorough talk with him concerning the outlook for the Exposition in England, and made to him a full written report of what other foreign countries had done toward participating and in making appropriations therefor, such a report having been requested of him by Lord Lansdowne.

On Sunday, March 1st, I was invited by Lord Alverston, Lord Chief Justice of England, to lunch at his residence, the only other guest being Newton Crane, through whom the Lord Chief Justice had previously sent me an invitation to visit him at his court, which invitation I had been unable to accept. It was understood that Lord Alverston, who had been a member of the English commission to the Chicago Exposition, would also be appointed on the commission to the St. Louis Exposition. The household of the Lord Chief Justice is presided over by his sister, Miss Webster. The lunch was pleasant, and I trust profitable to the Exposition, Lord Alverston asking many questions concerning the Exposition, the extent of the grounds, the location of the site, and the portion thereof which had been assigned to the buildings of foreign countries. His experience at previous expositions equips him for his duties in connection with ours. I learned from his conversation that the English commission will make every effort to erect a building upon our grounds, and make an exhibit in keeping with the position occupied by the British Empire among the nations of the earth.

The Lord Chief Justice asked if the "Crisis," written by Winston Churchill, which he had read with great interest, gave a correct statement of conditions and occurrences in St. Louis at the time its scenes were enacted. He is a man of imposing presence, of great dignity, of charming affability and a delightful host.

The remainder of the day was spent in arranging details with the foreign representatives, and in preparing for a visit by myself to the continental capitals above mentioned, provided no advice should be received from St. Louis requiring my immediate return home. I had wired on Sunday morning to the American ambassador at Paris, and to Commissioner-General Lagrave, requesting that arrangements be made, if possible, for my reception by President Loubet on Monday afternoon, and had also wired Minister Hardy, at Madrid, requesting that the minister of foreign affairs and the minister whose department had charge of Spain's participation in foreign expositions be asked for an audience on Wednesday or Thursday, and had also wired to the American ambassador at Berlin and to imperial Commissioner-General Lewald, requesting that efforts be made to secure an audience with the German Emperor at some hour during Monday,

March 9th, the itinerary being arranged with a view of visiting the above mentioned capitals in the time specified, if possible, in order that I might catch the North German Lloyd Steamer Kronprinz Wilhelm, which was to clear from Bremen for New York on Tuesday, March 10th. The European representatives of the Exposition, when this itinerary was outlined to them, received it with becoming respect, but with outspoken incredulity as to my ability to carry it out. The project was thoroughly discussed in all its bearings, and notwithstanding the emphatic doubt entertained by those who had had much more experience in Europe than I had, I concluded to make the effort, the physical hardships of the trip being least considered of all the objections presented or suggested.

France:

I left London on the night of March 1st at 9: 00 o'clock, and after a two hours ride on the railroad, arrived at Dover; taking steamer for Calais, I reached there about 1:00 o'clock. At Calais, I took a train for Paris, which was reached at 6:00 o'clock on the morning of March 2nd. This journey was the most uncomfortable and the most trying of all those taken during my sojourn in Europe.

Soon after breakfast I was called upon by C. M. Schwab, president of the United States Steel Corporation, who had been spending six months in Europe for his health, which now seems fully restored. He told me he proposed to return to America on the Kronprinz-the same steamer upon which I had planned to come home. Mr. Schwab talked freely about the Exposition and assured me he would aid it in every way within his power.

I was also honored by a call from Colonel Hunsicker, a citizen of the United States, a Pennsylvanian by birth, who has for twelve years been the representative of the Carnegie and the United States Steel companies. The Colonel had been very attentive to me in London, and having preceded me to Paris had arranged a dinner for Sunday evening, March 1st, at the Hotel Ritz., at which I was to be the chief guest, and among the other guests were to be Sir Thomas Lipton and Mr. Schwab. During my stay in London, Sir Thomas Lipton had been at the Riviera, but had by cable instructed his secretary to call upon me and express his regrets that he was away from home during my presence in London, and to say to me that if I would remain until Monday, March 2nd, he would return to London and be pleased to entertain me. I had replied, regretting that my plans would not permit of my remaining in London beyond March 1st. Sir Thomas Lipton arrived in London from Paris about an hour after I had left to make the same journey in the opposite direction. We exchanged several telegrams, and from several sources I was pleased to learn of his interest in the Exposition, and of his activity in promoting an English exhibit thereat. His influence in England is important, and his acquaintance with the affairs of the United States, where he has investments and commercial relations, qualifies him to render material aid to our enterprise. I much regret that we were unable to meet.

During the forenoon of March 2nd, Colonel Hunsicker informed me that the Dowager Duchess of Manchester (nee Miss Yznaga, of New York) and her sister, the Countess Kay, were at the Ritz Hotel, and desired to meet the President of the St. Louis Exposition. Taking advantage of the opportunity, I was presented and informed by the Duchess that King Edward had dined with her on the evening of Wednesday, February 26th, and had expressed such interest in the St. Louis Exposition, whose President he had met, during the same day, that she desired to know more about the Exposition herself. A like desire was manifested by the Countess Kay. I mention these incidents only to show how great a motive of exposition exploitation and publicity in England is recognition by the King.

About 10: 00 o'clock I was informed by Commissioner-General Lagrave, and also by Secretary of Embassy Vignaud that President Loubet would receive me at 6:00 o'clock in the afternoon; Ambassador Porter was confined to his residence by a severe attack of la grippe. Accompanied by the commissioner-general, I called upon the mayor of Paris and

the prefect of the Seine, and also upon the minister of commerce, whose department has charge of French participation in foreign expositions. The reception by these officers was cordial, all of them expressing the hope and conviction that France would have a creditable and interesting exhibit, and erect an appropriate building at St. Louis in 1904. The minister of commerce extended to me verbally an invitation to a dinner to be given at 8:00 o'clock the same evening at the ministry.

At 1: 00 o'clock, I was the guest at a luncheon given by Commissioner-General Lagrave at the Cafe de Paris, which was attended by Mr. Ives, Mr. Bowen, Mr. Hardee, Mr. Taylor, Mr. Thompson and several other guests. During the afternoon I was waited upon by the resident secretary and an ex-president of the American Chamber of Commerce in Paris, and urged to name a date for a banquet which that organization desired to give me. I stated to them that my engagements would not permit my accepting the proffered honor, as I would leave for Madrid on the following day, but would return to Paris on the evening of March 6th, and leave for Berlin at 2: 00 o'clock on the afternoon of March 7th. Thereupon the delegation stated that a breakfast would be arranged for the forenoon of March 7th.

At the appointed hour, 5:00 o'clock, accompanied by Secretary of the Embassy Vignaud and Commissioner-General Lagrave, I repaired to the Elysee Palace to be presented to the President of the French Republic. His welcome was courteous and very friendly. As he did not speak English and I was not sufficiently familiar with his language to converse with him in French, Messrs. Vignaud and Lagrave acted as interpreters while taking part in the conversation themselves.

The President evidently cherishes the desire that his country shall make a credible exhibit at the St. Louis Exposition and showed familiarity with the active preparations that are being made to that end. I assured him that the Exposition would feel highly honored if he would visit it himself. He replied that while appreciating the invitation he feared that his duties and his age would prevent him giving himself the pleasure of visiting America. He assured me he was confident the Exposition would be eminently successful, as the American people always succeeded in what they undertook. He expressed admiration for American character and energy, and said the Exposition had his best wishes. The audience lasted about twenty-five minutes, and was, to me, a most satisfactory and gratifying experience. The French papers took due notice of the reception, and its effect on the French exhibitors and on the French people generally was, in the judgment of Commissioner-General Lagrave, very helpful to the work of the French commission.

President Loubet invited me to attend a state ball to be given at the Elysee Palace on the same evening and stated that he would send a card to my hotel, and that I might attend for thirty minutes if unable to stay longer. After leaving the palace of the President, I went unaccompanied to the residence of the American ambassador, who had written me early in the day that he desired to see me, notwithstanding he was denying himself to callers generally, I found him suffering from la grippe in a malignant form, his professional nurse warning me before entering his presence that, although the ambassador might insist upon my remaining, I should not do so, as a protracted visit would be injurious to him. The ambassador regretted sincerely that he could not be of personal assistance to me while in Paris but showed himself remarkably familiar with the progress of the Exposition, and with the work being done in France toward a representative exhibit by that country.

At 8:00 o'clock, I attended the dinner at the ministry of commerce, at which a number of government officials and members of the Senate and Chamber of Deputies and other representative citizens were present. I was greatly impressed with the elegant appointments of the function, the equipment of a department of the government for providing such an entertainment being unsurpassed by any of the most noted restaurants or hotels in Paris, and such a condition being entirely unknown in America. The dinner was presided over by Georges Trouillot, minister of commerce, who proposed as the only sentiment of the evening, the "American Republic, President Roosevelt, and the President of the Universal Exposition of 1904."

My response to the toast, although purely extemporaneous, and delivered in English, seemed to be understood by a majority if not all of my auditors, and was apparently well received in keeping with the reputation of the French people for proverbial politeness. There were forty or more plates at the table, the minister of public instruction, the president of the French section, the president of the society of French industrials, the director of the ministry of commerce, the commander-in-chief of the French army, the chief of cabinet of the ministry of commerce, being among the guests. The place of honor, instead of being at the right of the chairman, was vis-a-vis to him. The attaches of the Exposition who accompanied me to Paris were also guests all the dinner.

From the ministry of commerce, accompanied by Commissioner-General Lagrave, I went to the ball at Elysée Palace, where I was hospitably received by President Loubet, who advanced from the position in which he had received the guests who had preceded me, and honored me by a hearty shake of the hand, which appeared to be an exception to his practice of the evening, neither the guests who preceded me nor those who followed being honored in the same manner. After remaining at the ball about one hour and meeting a number of distinguished citizens of the French Republic and several members of the diplomatic corps, I went with M. Lagrave to the Grand Opera House, and saw the last act of "Salambo, the Daughter of Hamilcar."

In the forenoon of March 3rd, I was escorted by M. Lagrave to the Paris chamber of commerce, where I was flatteringly received by 300 or 400 of the merchants of that city, most if not all of whom had signified their intention of exhibiting at the St. Louis Exposition. After being introduced by the president of the chamber, I addressed the exhibitors in a speech of about twenty minutes, returning from there to the Hotel Ritz, whence, after a short talk with Ambassador Storer, who, being in Paris, had called at the hotel to meet me, I hurriedly proceeded to the Quai d'Orsay, arriving there just in time to take the Sud express for Madrid at twelve minutes past noon. The first act of the continental itinerary had been finished, and more accomplished in the brief period allotted to it than I had any right to expect.

Spain:

The journey to Madrid was without incident. The "train de luxe," which I had been told was by far the best train in Europe, did not make nearly as good time as many of our limited trains in America, nor were the accommodations to be compared with those luxurious trains operated between St. Louis and the Atlantic seaboard. A change of cars at the Spanish border at midnight was required; it is customary at the same time and place for Spanish customs officers to inspect the baggage of all entering that country. In my case no examination was made, because a friend at Paris had secured for me a letter from the Spanish minister there, which not only saved the trouble of opening two trunks and six pieces of hand luggage for inspection but commanded the courteous and almost overwhelming attention of the Spanish customs officers.

On arriving in Madrid at 3:00 o'clock on the afternoon of March 4th, I was met at the station by United States Minister Hardy, who accompanied me to the Hotel de Paris, where commodious and handsomely furnished rooms had been reserved. During the afternoon, accompanied by Secretary of Legation Sickles, I called at the ministry of agriculture, but was informed that the minister was engaged in cabinet council preparatory to a meeting of the cabinet with the King the following day, Thursday, the appointed time for the weekly conference. In the evening I dined with Minister and Mrs. Hardy, the other guests being Secretary and Mrs. Sickles and Mr. Summers, who is representing the United States government in the investigation of Spanish war claims in Madrid. At 11:30 o'clock in the evening, accompanied by Mr. Summers, I went to the most fashionable theater in Madrid, where a nightly performance is kept up until 2:00 o'clock and sometimes to a later hour. After remaining there about an hour, we went to another theater, and thence to our hotels at about 1:30 o'clock, at which hour the streets of Madrid were as full of people and of life as they had been at any hour during the day or evening. That condition, I was

informed, obtains continuously, the people frequenting the streets in large numbers until a very late hour.

On the following day, March 6th, accompanied by Minister Hardy, I called upon the president of the cabinet, Sr. Silvela, and also on the minister of foreign affairs, with whom engagements had been previously made. We also called on the minister of agriculture, who presides over the department which has the supervision of Spanish participation in foreign expositions. Each of these conferences was characterized by thorough good feeling on the part of the Spanish minister, who in every instance gave assurance that Spain will participate in the Exposition and make a creditable exhibit thereat. These statements were highly gratifying, and under all the circumstances should be considered as a sufficient cause for congratulation on the part of the Exposition. The people of Spain do not seem to cherish any bitterness towards the citizens of our country, but manifested a genuine good-will toward the Exposition, and an earnest desire to take part therein.

While in Madrid I opened negotiations with a resident of that city to represent the Exposition in Spain. He is a man of broad culture and wide acquaintance, and not without experience in exposition exploitation. While the present government of Spain is unanimous in favor of Spain's participation at St. Louis in 1904, still an appropriation by the Cortes is required, and in order to secure it, sentiment favorable thereto should be instilled into the people. Santiago Perez Triana, whom I engaged, is well equipped to bring about such a condition.

I did not see the young King of Spain because there appeared to be a misunderstanding between Minister Hardy and the Spanish minister of foreign affairs as to the time of my arrival in Madrid, the latter being under the impression that I was not due there until the morning of Thursday, March 6th, and would depart the same evening. Regret was expressed by President Silveia and the foreign minister that I could not remain over Friday, when there would be no question about the King being able to see me. My itinerary had been arranged, however, and could not be deviated from. President Silveia told me the King was interested in the Exposition, and had expressed regret, when talking of my presence in Madrid, that he himself would be unable to visit the Exposition.

I called also upon the Marquis de Commas, one of the most progressive men in Spain and president of the Spanish steamship line that operates between Spain and the western hemisphere. He manifested interest in the Exposition and promised his assistance toward a representative Spanish exhibit.

In my judgment Spain is in better condition today and has a more promising future than she has had for many years. The mass of the people are still imbued to a great extent with that hereditary pride that has made them indifferent to the progress or the occurrences of the outer world, but there are exceptions to this rule, and they are rapidly becoming more numerous. The material resources of Spain are but partially developed and offer a tempting and profitable field for American enterprise and capital.

Madrid is a most interesting city, and I regret that my engagements did not permit of a longer stay therein. The numerous calls I was compelled to make upon ministers of the government prevented me from visiting even the celebrated Del Prado, where are collected a number of the works of Velasquez and many other interesting objects of art.

Second Visit to Paris:

I left Madrid at 7: 40 o'clock on the evening of Thursday, March 5th, for Paris. On approaching the frontier of France about 11: 00 o'clock in the forenoon of Friday, March 6th, the thought occurred to me that I would present to the customs officers my official card as President of the St. Louis Universal Exposition in order that I might be saved the annoyance of opening my baggage for inspection. My secretary and myself were encumbered with a trunk each, and with six pieces of hand luggage, including a typewriter and a case of accumulated correspondence and stationery. The typewriter had given us more trouble

in crossing boundaries than any other piece of baggage we had; it appears to be a subject for tariff in most European countries, and in every instance we had to give assurance that it was exclusively for our own use. The presentation of the official card had the desired effect, the customs officers not only passing the baggage without examination, but showing us the utmost courtesy. Before clearing for America, we had four more frontiers to cross, and it is unnecessary to say that I profited by my experience at the French-Spanish border, and in each case exhibited my official card, and in each instance it had the desired effect. At this writing, which is on the North German Lloyd steamer en route to America, I am wondering whether the same official card will be treated with like consideration at the port of entry of our own country, which we are approaching.

I arrived in Paris at 11:00 o'clock in the evening of Friday, March 6th, and was met at the Quai d'Orsay station by Commissioner-General Lagrave and his secretary, and by Professor Ives and Hawkins Taylor, and by Mr. Bowen's assistant in Paris, M. Villeroi, who accompanied me to the Hotel Ritz. Mr. Lagrave informed me that the breakfast tendered by the chamber of commerce for Saturday, March 7th, had been combined with a much larger function, arranged by the French exhibitors under the direction of the French minister of commerce, M. Georges Trouillot; that the breakfast would be at the Hotel Continental at 11:00 o'clock on Saturday morning, and would be attended by five hundred guests, comprising many officials of the government, and a great number of French merchants and manufacturers who proposed to exhibit at St. Louis.

M. Lagrave took leave of me about 12:00 o'clock, but the conference between Messrs. Ives and Taylor and myself was prolonged until long after midnight. In the meantime, my secretary was busily engaged in transcribing the speech which I had dictated while en route from Madrid to Paris. I had seen from the Thursday morning issue of the Paris edition of the *New York Herald* a notice regarding the breakfast and felt the occasion to be of sufficient importance to merit a prepared response on behalf of the Exposition. As the minister of commerce spoke in French only, as was the case with the President of the French Republic and many other officials of the government, it occurred to me that my response at the breakfast, if delivered in the tongue of the country whose guest I was, would not only be more complimentary, but would serve to give a more cosmopolitan character to the Exposition. I therefore asked M. Lagrave to have the sentiments I had prepared translated into French, and concluded to make the effort to read my response in French at the breakfast of Saturday.

Before going to breakfast, I was honored by a call from the American ambassador to the court of Austria, Hon. Bellamy Storer, who was in Paris on private business, and with whom I had by wire requested an interview. Mr. Storer gave it as his judgment that it would be inopportune for me to go to Vienna at this time, stating that after Mr. Stiasny had given the manufacturers and probable exhibitors of that country some information concerning the scope of the Exposition, and after activity in exposition preparations in other countries had impressed itself upon the people of Austria, it would be timely for me to approach the government of that country, but that any appeal to the crown or ministry at this juncture would be futile. I concluded to follow his advice, wrote Mr. Stiasny to redouble his efforts, and directed Professor Ives and Mr. Kohlsaat to proceed to Vienna as soon as the work they now have in hand would permit.

The breakfast at the Hotel Continental was successful beyond my most sanguine expectations. It was presided over by M. Georges Trouillot, minister of commerce, and was attended by many other officials of the government, the total attendance being nearly or quite five hundred. As I had informed Mr. Lagrave that I would be compelled to leave for Berlin on the Nord Express, leaving at 1:50 p. m., there was little time for speeches. About 12:30 the chairman arose, and in his own language delivered a speech, which met with

the enthusiastic approval of his auditors. He was followed by M. Dupont, president of the French section; he by the personal representative of President Loubet, and he by M. Cachard, president American chamber of commerce in Paris. M. Trouillot then arose and presented me with a very handsome Sevres vase on behalf of the ministry of public instruction the Sevres works being the property of and operated by the French government; M. Trouillot also presented me, on behalf of the ministry of commerce and the French section, another vase of beautiful proportions, being a sample product of the French trade, and also an exquisite lace fan for Mrs. Francis. I was also presented with a plaquette by M. Ancelot, president, on behalf of the committee on foreign expositions of the French chamber of commerce. M. Cachard, president American chamber of commerce in Paris, also presented me, on behalf of that body, with a most shapely silver loving cup. It is unnecessary to say how highly I appreciate these mementoes. The acceptance of them and acknowledgment of my gratitude had not been anticipated in the response prepared for delivery in French, consequently I was forced to give utterance in my mother tongue to the deep sense of obligation experienced. This ordeal did not render me better fit for the trying effort of the French address-but it was too late to look back. Abandoning the plan was as dangerous as failing in the attempt. Suffice it to say that I managed to complete the task, and my French auditors, with their proverbial politeness, expressed such approval that I felt more than compensated for the labor undergone and the risk incurred. I append to this report a copy of the French address in the hope that it may encourage every member of the Board of Directors to the study of that language, to the end that when our French visitors come to the Exposition in 1904, they may be welcomed in their own tongue.

Germany:

Leaving Paris on the Nord express at 1:50 on Saturday afternoon, March 7th, I arrived at Berlin at 8:40 the next morning, being accompanied by Lieut. Godfrey L. Carden, whom I had requested to meet me in Paris. Feeling the need of a short respite, from the tension incident to official receptions and calls, I did not advise the American ambassador or the imperial commissioner-general to the Exposition, Doctor Lewald, of my arrival in Berlin. During the afternoon of Sunday, however, both of those officials learned of my presence, sent their cards to the Hotel Bristol, where I had engaged rooms, and I thereupon called at the residence of each of them. In the evening I dined with the American ambassador and Mrs. Tower, and was informed that Emperor William would receive me at noon the following day, Ambassador Tower stating he had not been advised whether he would be expected to accompany me to the audience or whether I would be received alone, but he had made inquiry in order to ascertain the wishes of the Emperor. During the evening a message was received by the ambassador stating that the Emperor would see me alone.

After my return to the hotel, about 11:00 o'clock, Dr. Lewald called and invited me to a luncheon for the following day.

During Monday forenoon, accompanied by the Exposition's representative in Berlin, Mr. Brucker, I left my card at the official residences of Chancellor von Buelow, of Foreign Minister von Richthofen, and of Minister of the Interior von Posadowsky. At the appointed hour I presented myself at the royal palace, and was in due time received by His Majesty, the German Emperor. I was shown to a room, which, after a few minutes, the German Emperor entered unattended. He advanced by a quick step, extended his hand, expressed a cordial welcome, and for more than fifty minutes favored me with an interview which demonstrated that his reputation for general information, deep insight, keen observation and indomitable will-power, remarkable versatility and great strength of character is well deserved. During my sojourn in Europe, I was often told that in receptions by monarchical rulers, not only should the length of my visit be regulated by my royal host, but that he should lead the conversation, and that no subject should be discussed un-

less broached by himself. I am compelled to say that in the conversation of nearly an hour which I had with Emperor William II. of Germany, I cannot recall whether the topics touched upon were first mentioned by His Majesty or by myself. He impressed me as being sincerely desirous to learn of every advance that is made in every line of human endeavor throughout the world. He was unstinted in his praise of American ingenuity and enterprise, and asserted with candor, and it may be with pride, that it was his policy to copy from us whatever he thought worthy of imitation. He expressed great interest in the Exposition, said he hoped it would be eminently successful, and was confident it would be. He said he had already announced his intention of sending for exhibit some of his plate and other treasures which might be of interest to the American people, and in response to an inquiry from me, stated there was no objection to my so informing the exposition management and the American people. He trusted the German exhibit would be a representative one and was sure its educational features would be striking and probably instructive. In the course of the conversation, he alluded to a work by Houston Chamberlain, an Englishman living in Vienna—a recent publication called the “Foundations of the Nineteenth Century,” and when I remarked that I had not seen the work he said he would be glad to present me with a copy. Learning that I would feel honored by such a gift, he stepped to a door, called an aide, who in a few moments handed the Emperor a copy of Houston Stewart Chamberlain’s *“Die Grundlagen des Neunzehnten Jahrhunderts,”* which he passed to me. In returning my thanks, I suggested that his autograph, indicating the source of the gift, would be prized, whereby he promptly replied, “Certainly,” and taking the book, inscribed on the fly leaf: “Berlin, March 9th, 1903, Wilhelm, I. R., to Mr. Francis, President of the St. Louis Exposition.” The text is in German, and I regret to say that upon inquiry at a book store in Berlin I was told that it has never been translated into English, the author maintaining that although it was his mother tongue, the thoughts he desired to convey could be better expressed in German, and that much of their force and meaning would be lost if translated into English.

That this interview was interesting and instructive to a degree to myself personally goes without saying; that it was of great benefit to the Exposition in attracting thereto the attention of the German people, there can be no doubt. The subjects of the German Emperor not only revere him as a ruler of wisdom and force but respect him as a man whose every desire and aim is to promote their welfare, and add to the prestige of their country among the nations of the earth. The stereotyped sayings and well-worn platitudes about the effete monarchies of Europe are not applicable to all of the countries of the Old World in the beginning of the twentieth century. A ruler whose active and well-trained intellect keeps pace with the advances in the arts and in science, and whose watchful eye is ever upon the methods and the accomplishments of those whose trust he holds, whose energy and perseverance are marvelous and unsurpassed, le never content that his people should hold a second place in the march of human progress.

From the royal palace I called at the American embassy and was thence accompanied by Ambassador Tower to the luncheon of Dr. Lewald at the Hotel Bristol. This function was elegant and enjoyable. The American ambassador occupied the seat at the right of the host, and I that at his left. The guests were twenty-six in number, comprising Count Talleyrand-Perigord, Dr. Paasche, member of the Reichstag; Dr. Hopf, under-secretary of state; Dr. Wilhelmi, president of the imperial bureau of statistics; Mr. Loewe, manager of Ludwig Loewe & Co., large shipbuilders and gun manufacturers; Consul-General Frank H. Mason, Professor Bruno Schmitz, and Mr. Mannheimer, head of the largest cloak establishment in Germany. The luncheon was attended by Mr. Brucker, Lieutenant Carden and my secretary, Mr. Thompson. There were no set speeches, but Dr. Lewald proposed “The Louisiana Purchase Exposition,” and I made an impromptu response, which was taken by a stenographer, and is attached to this report.

In the afternoon, escorted by Ambassador Tower, I called upon Chancellor von Buelow and Foreign Minister von Richthofen, both of whom speak English fluently, as does the Emperor. Our reception was cordial and kind, the chancellor congratulating the American people on being so well represented at the court of Berlin, saying our ambassador was a credit to the United States. These ministers—as was the Emperor—were outspoken in their expressions of admiration for President Roosevelt and of the kindly feeling of the people of Germany for those of our country.

In the evening I was the guest at a dinner given by Foreign Minister von Richthofen at his official residence. The guests were twenty-two in number. Among them were the American ambassador, Hon. Charlemagne Tower; Secretary of Legation Richardson; U. S. Consul-General Mason; the minister of state, Count von Posadowsky-Wehner of the imperial department of the interior; Prussian Minister of Commerce Moeller; Prussian Minister of Public Works Budde; General Prinz zu Salm-Horstmar, vice-president of the German committee for the Olympic Games to be held in St. Louis; Under-Secretary of State von Muhlberg, foreign office; Director in the Foreign Office von Koerner; Dr. Richter, director in the imperial department of the interior; Privy Councilor of Legation von Aichberger; Commissioner-General Lewald; Prof. Anton von Werner, one of the leading artists in Berlin; Dr. von Martius; E. Borsig and C. Borsig, owners of one of the largest locomotive works in Germany; E. Loewe, another "captain of industry;" Prof. von Uechtritz, famous sculptor; the general agent of the New York Life Insurance Company, Baron von Nimptsch; Mr. Brucker, Vice-Consul von Jacobs and Count zu Limburg-Stirum.

During that day I had wired Minister Townsend at Brussels, asking that he arrange an audience with the King of Belgium for Tuesday, March 10th, if possible, having learned that I could spend twelve hours in the capital of Belgium and reach Cherbourg in time to take the North German Lloyd steamer *Kronprinz Wilhelm*, which was to clear from Bremen for New York on Tuesday, March 10th, and on which I had engaged passage home. Minister Townsend had promptly replied that he would make effort to comply with my request, but that King Leopold was staying at his country residence, about forty minutes' ride outside of Brussels. Later in the day I received another message from Minister Townsend stating the audience had been arranged for 4:00 o'clock Tuesday afternoon. Consequently at 11: 00 o'clock Monday evening I took the train at Berlin for Brussels, after a stay of thirty-six hours in the capital of the German Empire, where the attention shown the President of the St. Louis Universal Exposition was complimentary in a high degree, where he had made many distinguished and pleasant acquaintances, where he had received numerous assurances from representative and influential people of their intention to visit the Exposition, and where his personal experience had been enjoyable and flattering, and worthy of grateful remembrance.

Belgium:

I arrived at Brussels at 11: 00 o'clock on the morning of Tuesday, March 10th, and was met at the station by the American minister, Hon. Lawrence Townsend, who insisted that myself and secretary accompany him to the legation, which is a residence and office in one, a customary practice in Brussels, and not unusual in Berlin. On arrival at the legation, I met its efficient secretary, Robert E. Winthrop, who has creditably filled that position for more than twenty years, and who, the minister informed me, had from the beginning of our undertaking been active in its support in Belgium. Mr. Townsend and Mrs. Townsend, a charming hostess, gave evidence of deep interest in the St. Louis Exposition by their familiarity with its scope, and with the progress of its physical work on the site, as well as the state of its domestic and foreign exploitation. Both have spared no effort to bring about the participation of Belgium, whose response had at first been a declination; but through the influence of the American minister, and the Exposition's representatives, who had spent some time in Brussels, a reconsideration was brought about, and a few days before my arrival an appropriation of 600,000 francs had been made, and a formal announcement of participation given through our department of state.

Minister Townsend had arranged that he and myself should call upon Prime Minister de Schmed and Minister of Agriculture Francotte at their respective departments. By previous understanding, however, these ministers gave me a joint reception at the department of state, where, accompanied by Minister Townsend, we discussed the Louisiana Purchase Exposition and Belgium's participation therein for more than one hour.

Minister Townsend had insisted that both myself and secretary should remain at his residence during our short stay in Brussels, and refused to accept a declination of his proffered

hospitality. I was more than pleased to avail myself of such highly cultured associations and surroundings so congenial. After lunch, I was honored by a call from the British minister, Sir Constantine Phipps, who was accompanied by Arthur Raikes, secretary of the British embassy at Washington, but who at that time was visiting Brussels, where he had formerly been stationed as secretary of the British legation. Daron Lambert, the head of Rothschilds' banking house in Belgium, had been invited to meet me at luncheon, but was prevented from doing so by other engagements. Having a few minutes unprovided for before the appointed hour (4:00 o'clock) for the reception by King Leopold, and desirous to replenish my depleted exchequer, Minister Townsend escorted me to the Brussels branch of Rothschilds, where Baron Lambert made many inquiries concerning the St. Louis Universal Exposition and expressed his intention of visiting it. Thence we went to the palace, where the American minister and myself were cordially welcomed by King Leopold, a progressive monarch, who is said by Europeans and others to be imbued with the American instinct of trade and accumulation. The King knew much about the Exposition, but desired to learn more, and I was glad of an opportunity to give him all the information on the subject that I was able to impart. The conversation continued for one hour. (I had for the fifth time been cautioned that an audience by royalty should not be terminated by anyone other than the royal host himself.) During that time King Leopold often expressed admiration for the push of the American people, and the conviction that the Exposition of 1904 would surpass all of its predecessors. He remembered that Thomas F. Walsh, of Colorado, had at my request extended to him an invitation to visit the Exposition, and expressed great regret that his years and his duties and responsibilities would probably, if not certainly, prevent his accepting. As President, and on behalf of the Exposition, I renewed the invitation, but was, of course, careful not to commit the federal government, which I had not the authority to represent. The King said he hoped the Belgian exhibit would be representative and creditable to his country, the area and population and resources of which, he declared, could not be compared either with those of the United States or of some other European countries which are making preparations for participation in the Exposition. The minister and myself assured him of the appreciation of our country and of the Exposition of Belgium's acceptance of the invitation, and gave him sincere assurances that the exhibit of Belgian industries and art could be such as to cause him and his people no sensations other than those of satisfaction and pride.

After the termination of this interview, which I trust will not be without beneficial results, Minister Townsend and I proceeded to the Belgian House of Parliament. The session had just adjourned, but we met several of the members, and were accorded the unusual liberty of going through the corridors and chambers of a beautiful and imposing structure. Belgium, with its dense and thrifty population, covers an area comparatively small even for Europe, and I was informed that it was the general, if not the universal, custom for the members of the Parliament to go to their respective homes for dinner after the labors of a day of legislation, which, to a citizen of this country, is almost incomprehensible. It is difficult for one to imagine even the members of one of our state legislatures dining and sleeping at their residences between the daily sessions of the body which they compose, and when a like custom is thought of for members of the Congress at Washington the mind promptly turns to the daily use of the air ships, which it is hoped the Universal Exposition of 1904 will so perfect as to make them agencies of hourly transportation.

After a delightful American dinner at the home of our hospitable Minister and Mrs. Townsend, I accompanied them to the opera, where we were shown to the royal box, in which I had the honor of meeting several members of the diplomatic corps at Brussels. The opera was a new one, whose author, a promising composer of Liege, Belgium, was in the audience. It was a gala night in musical circles in the cultured kingdom which has bestowed so many priceless boons on the votaries of Mozart and of Wagner and of Beethoven.

On my way to the train, I was again joined by Lieutenant Carden, who had gone from Berlin to Liege, where he had visited the well-known manufacturing establishment of the John Cock-erill Company, makers of boilers, and had met with marked success, which, he said, had been accomplished without much effort, attributable in his Judgment to the attention shown the President of the Exposition in the countries visited by him during the previous ten days. Lieutenant

Carden was to remain in Belgium a few days and go thence to Germany and Switzerland in prosecution of the work he is so well fitted to perform.

Taking a midnight train at Brussels, myself and secretary proceeded to Paris, where we arrived at 6:40 o'clock on the morning of Wednesday, March 11th. At the Hotel Terminus we were again met by Professor Ives and M. Villeroi. After breakfasting we took the train for Cherbourg, which point was reached at half-past three in the afternoon. The North German Lloyd steamer *Kronprinz Wilhelm*, which had cleared from Bremen at noon on the previous day, and from Southampton at 12:30 on Wednesday, reached Cherbourg at 6:00 o'clock. Our baggage, large and small, including the type writer, which had been of such useful service on the steamer, in London, and on all trains on the continent, was transferred to the tug and thence to the *Kronprinz*. It was followed by Mr. Thompson and myself, and we were in that frame of mind and body which prepared us to enjoy the restful pleasures of an ocean voyage home.

Acknowledgments:

I have given, perhaps in tiresome detail, a consecutive narrative of my experience in Europe during eighteen days. It is for you to judge and results to determine whether the tour will be beneficial to the Exposition. At this writing, March 16th, I have seen no St. Louis papers of a date later than February 21st but have had excerpts from two New York papers of February 24th and February 25th, which indicated that these publications gave the Exposition more space in describing the attention shown its President in Europe than they have ever accorded it in any previous issue. I have stated above what in my judgment was the effect on the people of each country by a special or private audience given by the ruler thereof to the Exposition's President. When the continental tour was outlined, not only did every Londoner express conviction as to my inability to carry it out, but nearly all of the Exposition representatives in Europe were of the opinion that it was impossible, and that the effort might result in my discomfiture and in damage to our foreign exploitation. When I started from London it was not contemplated that I would be able to see the King of Belgium, which, as narrated above, was accomplished in addition to the plan proposed at the London conference of March 1st. I am sure you will not misunderstand me when I state that the expressions of the European press concerning this tour were of such a character as to give publicity to the Exposition to such an extent as could not have been effected by a deliberately planned exploitation requiring fourfold the time and costing many times the expense.

It is hard for Americana to understand the difficulties incident to a special reception by the rulers of European countries, who themselves are accustomed not only to fix the time for such audiences, but to name therefor a date more or less remote from the day when it is requested. I cannot in this connection give too much credit for the very discreet and effective services rendered by the American ambassadors and ministers in the capitals I visited. Ambassador Choate at London, Ambassador Porter at Paris, Ambassador Tower at Berlin, Minister Hardy at Madrid, and Minister Townsend at Brussels together with their efficient secretaries; Henry White in England, Henry Vignaud in France, Reynolds Hitt in Germany, Stanton Sickles in Spain, and Robert E. Winthrop in Belgium, were not only ready and willing to arrange for audiences and receptions when requested, but themselves suggested calls and courtesies which tended to promote the object of my mission. Furthermore, I should be recreant to my own feelings, if I failed to acknowledge the good-will manifested and the helpful assistance rendered by Consul-General Evans in London, Consul-General Mason in Berlin, Consul-General Gowdy in Paris, Commissioner-General Lagrave in Paris, Imperial Commissioner-General Lewald in Berlin, by F. c. Van Duzer, secretary of the American Society in London, and by James C. Stewart and Newton Crane, formerly St. Louisans, now living in London, where their energy and ability command a well-earned influence and an enviable respect.

CHAPTER XII

THE DEDICATION

**A Column of 4,000 Regular Troops and 8,000 National Guards
Marshaled by the Adjutant-General of the Army—Reviewed by
the President of the United States—Dedication Exercises—Ad-
dresses of President Roosevelt and Ex-President Cleveland—Dip-
lomatic Day—States' Day**

THE ceremonial dedication of the grounds and buildings celebrated the centennial anniversary of the purchase of the Louisiana Territory. On Thursday, the 30th of April 1903, the exercises began at an early hour. They were not completed until the evening of Saturday, the second of May. In recognition of the exalted purpose, the President of the United States, the only living ex-President of the United States, the highest officials of the federal and state governments, the official representatives of many foreign nations participated. In civic and military pageantry, in the various forms of official participation, no preceding exposition was dedicated with endorsement so universal.

The military parade of the morning of April 30th, 1903, will live long in memory. It was witnessed by multitudes estimated at from 300,000 to 400,000. Along the course of between three and four miles the people massed and observed with intense interest the battalions, the squadrons and the batteries as they marched by with brilliant cavalcades of staff officers in splendid uniforms, breaking the monotony of the long column. Few who enjoyed the spectacle had witnessed its like before or will see its equal again. The demonstration was the finest military parade in the west since the Civil war. Sidewalks, lawns, street intersections, reviewing stands, house windows and porticos along the line were thronged with spectators. After the grand marshal, General Henry C. Corbin, and staff had reached Kingshighway two miles of this column of military splendor could be seen filling the length of Lindell boulevard, moving between continuous masses of spectators. Even greater crowds awaited the military as they marched through the Forest Park drives to the reviewing stand.

The column was composed of United States engineers, artillery, cavalry and infantry; a detachment of sailors from the Monitor Arkansas which was anchored in the Mississippi, and uniformed members of the national guard from various states.

The column was preceded to the reviewing stand by the President of the United States, ex-President Cleveland, General Nelson A. Miles, twenty-six ambassadors and ministers from foreign countries, governors of various states and territories, and other distinguished guests, escorted by the Directors and officers of the Exposition, members of the National Commission and the mayor of St.

Louis, Hon. Rolla Wells.

The military in the procession numbered about 12,000 officers and men-4,000 regulars and 8,000 state troops. The column headed by the United States Marine band was composed as follows:

Order in Column:

Platoon of Mounted Police
Colonel Mathew Kiely, Commanding
Detachment of Cavalry

CARRIAGES

Mayor of St. Louis
The President of the United States
Distinguished Guests
Diplomatic Corps
Governors of States and Territories

MILITARY COLUMN

U. S. Marine Band

GRAND MARSHAL

Major-General Henry C. Corbin, U. S. Army

STAFF

Lieut.-Colonel E. A. Godwin, Ninth U. S. Cavalry, Chief of Staff
Brigadier-General John A. Johnston, Adjutant-General

SPECIAL AIDES

Brigadier-General A. E. Bates, Paymaster-General, U. S. Army
Colonel George S. Anderson, Eighth U. S. Cavalry
Lieut.-Colonel H. J. Foster, Royal Engineers, British Army
Lieut.-Colonel John Kress, Ordnance Department, U. S. Army
Lieut.-Colonel John W. Jacobs, Quartermaster's Department, U. S. Army
Captain Ralph Harrison, Second U. S. Cavalry
First Lieutenant George H. Shields, Twelfth U. S. Infantry
First Lieutenant Charles B. Clark, Sixth U. S. Infantry
First Lieutenant Malin Craig, Sixth U. S. Cavalry
First Lieutenant Stuart Heinzelman, Sixth U. S. Cavalry
First Lieutenant Walter F. Martin, Second U. S. Cavalry
First Lieutenant Robert S. Clark, Ninth U. S. Infantry

AIDES

General John B. Castleman, at Large	Colonel Wm. O. Bates, New York.
Colonel Jay L. Torrey, at Large.	Lieut.-Colonel Harry C. Cushman, New York
Lieut.-Colonel Webb C. Hayes, at Large	Major Baxter R. Hunter, North Carolina
Colonel Samuel Moody, Pennsylvania	Colonel J. Gray Estey, Vermont
Colonel Danie! B. Shepp, Pennsylvania	Colonel R. D. Williams, Kentucky
Lieut.-Colonel Lewis T. Bryant, New Jersey	Major J. Embrey Allen, Kentucky
First Lieutenant Walter E. Edge, New Jersey	Colonel J. W. Canada, Tennessee
Colonel R. N. Thomas, Georgia.	Captain J. P. Fyffe, Tennessee
Colonel Clifford L. Anderson, Georgia	Colonel C. B. Wing, Ohio
General Russell Frost, Connecticut	Brigadier-General E. P. Cottreaux, Louisiana
Colonel James G. White, Massachusetts	Colonel Arsene Perrilliat, Louisiana
Lieut.-Colonel Frederick D. Carpenter, Massachu-	Colonel George W. McCoy, Indiana
setts	Major Frank E. Stevenson, Indiana
Major Charles Hayden, Massachusetts	General William Henry, Mississippi
Brigadier-General Laurason Riggs, Maryland	General Louis V. Clark, Alabama
First Lieutenant E. L. Woodside, Maryland	Colonel William W. Brandon, Alabama
Colonel Alexander M. Higgins, Virginia	Colonel Henry B. Gray, Alabama

Colonel O. P. Gaut, Alabama	Colonel Robert H. Seng, Minnesota
General Milton Moore, Missouri	Colonel Wilder S. Metcalf, Kansas
Colonel C. H. Zoll, Missouri	Colonel Perry M. Hoisington, Kansas
General W. H. Haynes, Arkansas	Lieut.-Colonel C. C. Lewis, Jr., West Virginia
Brigadier-General B. W. Green, Arkansas	Colonel C. E. Adams, Nebraska
Colonel J. Lyford Horner, Arkansas	General Sherman Bell, Colorado
Colonel Claude H. Sayle, Arkansas	Colonel James H. Brown, Colorado
Colonel Will A. Waite, Michigan	General E. S. Miller, North Dakota
Lieut.-Colonel O. C. Guesaz, Texas	General James A. Drain, Washington
Major L. S. Flatteau, Jr., Texas	Lieut.-Colonel John A. Bagley, Idaho
Colonel Wm. G. Dows, Iowa	Major Bernard F. O'Neil, Idaho
Colonel W. B. Humphrey, Iowa	Brigadier-General F. A. Stilzer, Wyoming
Brigadier-General Otto H. Falk, Wisconsin	Colonel Nephi W. Clayton, Utah
Colonel S. J. Hendy, California	Brigadier-General W. H. Whiteman, New Mexico
Lieut.-Colonel George H. Pippy, California	Captain Edgar Jones, Oklahoma
Lieutenant Fred. W. Hunter, Oklahoma	

FIRST DIVISION-UNITED STATES ARMY

Major-General John C. Bates, U. S. Army, Commanding

PERSONAL STAFF

Captain William M. Wright, Second U. S. Infantry, Aide-de-camp
 Captain Horace M. Reeve, Seventeenth U. S. Infantry, Aide-de-camp
 First Lieutenant Van Leer Wills, Twelfth U. S. Infantry, Aide-de-camp

DIVISION STAFF

Major Edward J. McClelland, U. S. Cavalry, Adjutant-General
 Lieut.-Colonel Abiel L. Smith, U. S. Army, Chief Commissary
 Captain W. C. R. Colquhoun, U. S. Army, Chief Quartermaster
 Captain Francia A. Winter, U. S. Army, Chief Surgeon

FIRST BRIGADE, FIRST DIVISION-UNITED STATES ARMY

Brigadier-General William A. Kobbé, U. S. Army, Commanding

PERSONAL STAFF

First Lieutenant Walter S. Grant, Third U. S. Cavalry, Aide-de-camp

FIRST BATTALION, U. S. ENGINEERS

Major S. S. Leach, Corps of Engineers, Commanding

THIRD U.S. INFANTRY

Colonel John H. Page, U. S. Army, Commanding

TWENTIETH U.S. INFANTRY

Colonel W. S. Mccaskey, U. S. Army, Commanding

SECOND BRIGADE, FIRST DIVISION-UNITED STATES ARMY

Brigadier-General Frederick D. Grant, U. S. Army, Commanding

PERSONAL STAFF

First Lieutenant L. S. Morey, Twelfth U.S. Cavalry, Aide-de-camp

SIXTH U. S. INFANTRY

Colonel Charles W. Miner, U. S. Army, Commanding

TWENTY-SECOND U.S. INFANTRY

Major John J. Crittenden, U. S. Army, Commanding

DIVISION U.S. SEAMEN

U. S. Monitor Arkansas

Commander Charles E. Vreeland, U.S. Navy, Commanding

**MOUNTED DETACHMENT U. S. ENGINEERS
REGIMENT U.S. CAVALRY**

Major Frank A. Edward, Fourth U.S. Cavalry, Commanding

SECOND SQUADRON, EIGHTH U.S. CAVALRY

Major Charles G. Ayres, Eighth U.S. Cavalry, Commanding

THIRD SQUADRON, EIGHTH U.S. CAVALRY

Major William A. Shunt, Eighth U.S. Cavalry, Commanding

THIRD SQUADRON, FOURTH U.S. CAVALRY

Captain Harry C. Benson, Fourth U.S. Cavalry, Commanding

Ninth Band, U. S. Artillery Corps

BATTALION U. S. FIELD ARTILLERY

Major Henry M. Andrews, U. S. Artillery Corps, Commanding
Sixth Battery (Siege), Captain Granger Adams, U.S. Artillery Corps, Commanding
Seventh Battery, Captain William Lassiter, U.S. Artillery Corps, Commanding
Sixteenth Battery, Captain George W. VanDeusen, U.S. Artillery Corps, Commanding.
Twenty-Eighth Battery (Mountain), Captain C. T. Monohr, U.S. Artillery Corps, Commanding
Well Concert Band

SECOND DIVISION - NATIONAL GUARD

Major-General Charles F. Roe, N. G., New York, Commanding

PERSONAL STAFF

Major John Holland, N. G., New York, Aide-de-camp

DIVISION STAFF

Colonel Frederick Phisterer, N. G., New York, Adjutant-General
Lieut.-Colonel George A. Wingate, N. G., New York, Assistant Adjutant-General
Colonel George R. Fowler, N. G., New York, Chief Surgeon
Colonel William Chapin, N. G., New York, inspector-General
Lieut.-Colonel N. D. Thurston, N. G., New York, inspector Small Arms Practice
Lieut.-Colonel Guilford Hurry, N. G., New York, Chief Commissary
Lieut.-Colonel John Bogart, N. G., New York, Chief Engineer
Lieut.-Colonel James W. Cleveland, N. G., New York, Assistant Inspector-General
Lieut.-Colonel John N. Stearns, Jr., N. G., New York, Quartermaster-General.
Major William M. Kirby, N. G., New York, Inspector Small Arms Practice
Major Frederick T. Leigh, N. G., New York, Chief Signal Officer.

CONNECTICUT

Governor Adrian Chamberlain and Staff

NEW YORK

Governor B. B. Odell, Jr., and Staff

FIRST BRIGADE, SECOND DIVISION-NATIONAL GUARD

Colonel Samuel M. Welch, N. G., New York, Commanding

PROVISIONAL REGIMENT OF INFANTRY

Colonel S. M. Welch, 65th Regiment, Commanding

FIRST BATTALION

Major Charles E. P. Babcock, 65th Regiment, Commanding

SECOND BATTALION

Major Albert M. Hill, 3rd Battalion, Commanding

THIRD BATTALION

Major Charles H. Hitchcock, 1st Regiment, Commanding

LOUISIANA PURCHASE EXPOSITION

PROVISIONAL DIVISION, NAVAL MILITIA

Lieutenant E. M. Harman, 2d Battalion, Commanding
Band, 4th U. S. Cavalry

SQUADRON OF CAVALRY, NATIONAL GUARD OF NEW YORK

Major Oliver H. Bridgeman, Commanding

KENTUCKY BATTALION OF FOOT ARTILLERY

Captain Hal. T. Griffith, Kentucky State Guard, Commanding

OHIO

Governor George K. Nash and Staff

SECOND BRIGADE, SECOND DIVISION-NATIONAL GUARD

Colonel S. B. Stanbury, Ohio N. G., Commanding

PROVISIONAL REGIMENT OF INFANTRY, OHIO

Colonel B. B. Stanbury, Ohio N. G., Commanding

FIRST BATTALION

Major Lloyd Howard, 6th Regiment, Commanding

SECOND BATTALION

Major Fred S. Marquess, 8th Regiment, Commanding

THIRD BATTALION

Major Thomas J. Kirkpatrick, 3rd Regiment, Commanding

FIRST REGIMENT, OHIO NATIONAL GUARD

Colonel William E. Bundy, Commanding

COLUMBUS RIFLES, OHIO NATIONAL GUARD

Captain W. H. Fisher, Commanding

LOUISIANA

Governor W. W. Heard and Staff

INDIANA

Governor W. T. Durbin and Staff

MISSISSIPPI

Governor A. H. Longino and Staff

ILLINOIS

Governor Richard Yates and Staff

THIRD BRIGADE, SECOND DIVISION-NATIONAL GUARD

Colonel J. Mack Tanner, Illinois N. G., Commanding

FOURTH REGIMENT OF INFANTRY, ILLINOIS NATIONAL GUARD

Colonel J. Mack Tanner, Illinois N. G., Commanding

FOURTH DIVISION, ILLINOIS NAVAL MILITIA

Commander Simons, Illinois N. G., Commanding

TROOP G, FIRST CAVALRY, ILLINOIS NATIONAL GUARD

Captain S. O. Tripp, Illinois N. G., Commanding

MISSOURI

Governor Alexander M. Dockery and Staff

FOURTH BRIGADE, SECOND DIVISION-NATIONAL GUARD

Brigadier-General Harvey C. Clark, Commanding

PERSONAL STAFF

Captain Stephen E. Low, Aide-de-camp

Captain Harr, F. Shaw, Aide-de-Camp
Captain Louis D. Howard, Aide-de-Camp

BRIGADE STAFF

Lieut.-Colonel Keating Bauduy, Medical Director
Lieut.-Colonel James H. McCord, Inspector-General
Lieut.-Colonel Claude L. Clark, Assistant Adjutant-General
Major George Howard, Chief Surgeon
Major Emmett Newton, Quartermaster
Major John A. Tuttle, Commissary
Major Alexander G. Cochran, Judge Advocate
Major A. V. Adams, Engineer Officer
Major John I. Martin, Inspector Rifle Practice

FIRST REGIMENT INFANTRY, NATIONAL GUARD OF MISSOURI

Colonel C. A. Sinclair, Commanding
(On Special Guard Duty.)

SECOND REGIMENT INFANTRY, NATIONAL GUARD OF MISSOURI

Colonel Harry Mitchell, Commanding

THIRD REGIMENT INFANTRY, NATIONAL GUARD OF MISSOURI

Colonel Cusil Lechtman, Commanding

FOURTH REGIMENT INFANTRY, NATIONAL GUARD OF MISSOURI

Colonel William E. Stringfellow, Commanding

SIXTH SEPARATE BATTALION INFANTRY, NATIONAL GUARD OF MISSOURI

Major Giboney Houck, Commanding

BATTERY A, MISSOURI FIELD ARTILLERY

Captain F. M. Rumbold, Commanding

CADETS MISSOURI STATE UNIVERSITY

Captain William D. Chitty, 4th U.S. Cavalry, Commanding

ARKANSAS

BATTALION OF ARKANSAS STATE GUARD

Captain W. C. Lavat, Arkansas N. G., Commanding

IOWA

Governor Albert B. Cummins

PERSONAL STAFF

Colonel I. B. Santee, Aide-de-camp
Colonel Chas. E. Mitchell, Aide-de-camp
Colonel A. A. Penquite, Aide-de-camp
Colonel Walter M. Davis, Aide-de-camp
Colonel Chas. W. Bopp, Aide-de-camp
Colonel Herbert M. Bigelow, Aide-de-camp
Colonel James Rush Lincoln, Aide-de-camp

GOVERNOR'S STAFF

Brigadier-General Melvin H. Byers, Adjutant-General
Colonel John C. Loper, Quartermaster-General
Colonel John. R. Prime, Inspector-General
Colonel Hugh B. Hedge, Commissary-General
Colonel Wilton McCarthy, Surgeon-General
Colonel Chas. G. Saunders, Judge Advocate-General
Colonel W. E. H. Morse, Inspector-General Small Arms Practice
Colonel Elward G. Pratt, Chief of Engineers
Colonel Chas. S. Crail, Chief Signal Officer
Major Joe Beeson, Military Secretary
Major John T. Hume, Assistant Inspector-General

LOUISIANA PURCHASE EXPOSITION

FIFTH BRIGADE, SECOND DIVISION-NATIONAL GUARD

Colonel Harry H. Caughlan, Iowa N.G., Commanding

FIFTY-FOURTH REGIMENT INFANTRY, IOWA NATIONAL GUARD

Colonel Harry H. Caughlan, Iowa N.G., Commanding

KANSAS

Governor W. Y. Bailey and Staff

COLORADO

Staff of Governor James H. Peabody

UTAH

Governor Heber M. Wells and Staff

OKLAHOMA TERRITORY**BATTALION OF INFANTRY, OKLAHOMA NATIONAL GUARD**

Major Chas. G. West, Oklahoma N.G., Commanding

PLATOON MOUNTED POLICE

President Roosevelt, ex-President Cleveland, the diplomatic corps, the congressional committee, and other distinguished guests with the officers and directors of the Exposition and members of the National Commission viewed the parade from a large reviewing stand erected in the Plaza of Saint Louis, the great central court of the Exposition between the palaces of Varied industries and Manufactures. In passing the reviewing stand the grand marshal and other military officers saluted the President of the United States in the manner prescribed by military regulation. The governors rode past with uncovered heads.

The Dedication:

The dedication exercises were held in the palace of Liberal Arts on the afternoon of the 30th of April. After the military column had marched by the reviewing stand the doors of this great structure were thrown open. The immense throng, estimated at 50,000 people, soon filled all of the seats and available standing room. A platform at one end of the immense hall was occupied by a chorus of 2,800 singers and an orchestra of 100 musicians drilled for the occasion.

At 2:00 P. M. the assemblage was called to order by the President of the Exposition. His Eminence, James Cardinal Gibbons, pronounced an invocation. Thomas H. Carter, president of the National Commission, was introduced as President of the Day. Following brief and appropriate introductory remarks President Carter called upon the chorus to sing Beethoven's "The Heavens Proclaiming."

The President of the Exposition presented the exhibit buildings to the President of the United States for dedication. He said:

The people of the Louisiana Purchase are proud of their membership in the Federal Union.

They are grateful for the benefits that have flowed from a life under the enduring institutions framed by the founders of the Republic. They congratulate their brethren on the position our country occupies among the nations of the earth and felicitate themselves on the part they have performed toward raising it to its present prestige and power.

They felt it a patriotic duty to fittingly commemorate the completion of the first century of their connection with the American Republic, and the rounding out of an important epoch in the life of the Republic. In the discharge of that duty this Exposition was conceived. The inhabitants of the twelve states and two territories comprised within the Purchase selected St. Louis as the scene of the celebration.

The people of this city, grateful for the honor conferred, promptly accepted it and cheerfully assumed the immense responsibility it entailed. The century just closed unequaled as it was in every line of progress, furnishes no more striking evidence of the advance of civilization than the development of the Louisiana Territory. A celebration in such an age and in such a country, to be fit, should be upon a scale in keeping with the best and the highest, and should be planned upon lines broad enough to take in every people and every clime.

A scheme so ambitious in its inception naturally had comparatively few advocates and encountered many antagonists and more doubters. It could not be accomplished without the recognition and the aid of the general government, which for a time it seemed impossible to enlist. It was decided that the amount required to launch an undertaking so comprehensive should be the same as that paid for the empire which Jefferson purchased—\$16,000,000. The Congress said to St. Louis, "When you have secured two-thirds of that sum we will provide the remaining third." The conditions were accepted and fulfilled.

After three years of struggle the sinews had been secured—the first step accomplished. Two years have since elapsed. During that period the work has been pushed in every state and territory and possession of the United States, and in every civilized country on the earth. The disappointments experienced and the obstacles encountered have but served to spur to renewed effort those who from the inception of the movement had determined to carry it to a successful consummation.

The further encouragement of the general government in the provision for its own exhibits, the co-operation of forty-one states and territories and possessions of the United States, the pledged participation of thirty-two foreign countries, are the results of vigorous domestic and foreign exploitation. That, and what you behold here today in physical shape we submit as the product of five years of labor, nearly four of which were devoted to propaganda and appeal and organization.

The plan and scope, comprehensive as they were in the beginning, have never diminished at any stage of the progress; rather have they been amplified and enlarged. St. Louis, with an ever-widening sense of responsibility, and an ever-growing appreciation of the opportunity, has, up to this moment, risen to the full measure of the duty assumed. The management of the Exposition has never despaired, but with a realizing sense of the mighty task it has undertaken, and mindful of the limitations of human capabilities, with singleness of purpose and with personal sacrifice for which it neither asks nor deserves credit has striven to meet the expectations of those whose trust it holds.

The Exposition Company makes its acknowledgments to those faithful and efficient officials whose intelligent services have contributed so much toward bringing the enterprise to its present stage. The company expresses its obligation to the artists and artisans who have reared these graceful and majestic structures, and whose labors have been inspired more by pride in the end to be achieved than by hope of material reward.

The Universal Exposition of 1904, when the date of the opening rolls around one year from today, will, with its buildings completed, its exhibits installed, be thoroughly prepared to receive the millions of visitors who will enter its gates. The distinguished assemblage which honors us with its presence today can come nearer forming an adequate conception of the scope of the work by personal inspection than through the writings or illustrations of authors and designers however great their talent may be.

To the President of the United States, to the representatives of foreign countries, to the chief executives of the sovereign states, to the senators and representatives of the Na-

tional Congress, to the great concourse of visitors here congregated, we extend greeting. If you are pleased with what has been accomplished, your approval is abundant reward for the labor we have performed.

We bear in mind and trust you do not overlook that this celebration is of no section, but of the entire country. It is our hope and our expectation, that every section and every commonwealth, and, in fact, every community, will cherish a proprietary interest and lend helpful aid to this undertaking, to the end that it may prove as nearly as may be commensurate with the country and the century whose achievement and advancement it is designed to commemorate.

The beautiful picture whose outlines you now behold will, to adopt the simile of the chief designer, when completed, compose a song that will reverberate around the globe.

And now, Mr. President, it is my pleasing privilege and high honor to present to you for dedication the buildings of the Louisiana Purchase Exposition. May a high standard of citizenship and broader humanity and the mission of the country whose worthy representative you are be sustained and fostered and promoted by the uses to which these structures are devoted. May the happiness of mankind be advanced and broadened by the lofty purpose that inspired this undertaking and moved our own and sister countries to unite in its accomplishment.

The President of the United States coming forward to the speaker's stand received a tumultuous ovation. Yielding to the enthusiastic clamor of the audience he took his stand on the desk where he was in full view from head to foot. The dedication address was delivered with spirit and with enunciation which carried the language to the hearing of most of those within the auditorium. The telling sentences were punctuated with applause which at times increased to deafening measure. The President said:

Mr. President, Ladies and Gentlemen: At the outset of my address let me recall to the minds of my hearers that the soil upon which we stand, before it was ours, was successively the possession of two mighty empires-Spain and France-whose sons made a deathless record of heroism in the early annals of the New World.

No history of the western country can be written without paying heed to the wonderful part played therein in the early days by the soldiers, missionaries, explorers and traders, who did their work for the honor of the proud banners of France and Castile.

While the settlers of English-speaking stock and those of Dutch, German and Scandinavian origin, who were associated with them, were still clinging to the eastern seaboard, the pioneers of Spain and of France had penetrated deep into the hitherto unknown wilderness of the West and had wandered far and wide within the boundaries of what is now our mighty country. The very cities themselves-St. Louis, New Orleans, Santa Fe-bear witness by their titles to the nationalities of their founders. It was not until the Revolution had begun that the English-speaking settlers pushed west across the Alleghenies and not until a century ago that they entered in to possess the land upon which we now stand.

We have met here today to commemorate the hundredth anniversary of the event which more than any other, after the foundation of the government, and always excepting its preservation, determined the character of our national life-determined that we should be a great expanding nation instead of relatively a small and stationary one.

Of course, it was not with the Louisiana Purchase that our career of expansion began. In the middle of the Revolutionary war the Illinois region, including the present states of Illinois and Indiana, was added to our domain by force of arms, as a sequel to the adventurous expedition of George Rogers Clark and his frontier riflemen.

Later the treaties of Jay and Pinckney materially extended our real boundaries to the west. But none of these events was of so striking a character as to fix the popular imagination. The old thirteen colonies had always claimed that their rights stretched westward to the Mississippi, and, vague and unreal though these claims were until made good by conquest, settlement and diplomacy, they still served to give the impression that the earliest westward movements of our people were little more than the filling in of already existing boundaries.

But there could be no illusion about the acquisition of the vast territory beyond the Mississippi, stretching westward to the Pacific, which in that day was known as Louisiana. This immense region was admittedly the territory of a foreign power, of a European kingdom. None of our people had ever laid claim to a foot of it. Its acquisition could in no sense be treated as rounding out any existing claim. When we acquired it, we made evident once for all that, consciously and of set purpose, we had embarked on a career of expansion; that we had taken our place among those daring and hardy nations who risk much with the hope and desire of winning high position among the great powers of the earth. As is so often the case in nature, the law of development of a living organism showed itself in its actual workings to be wiser than the wisdom of the wisest.

This work of expansion was by far the greatest work of our people during the years that intervened between the adoption of the constitution and the outbreak of the Civil war. There were other questions of real moment and importance, and there were many which at the time seemed such to those engaged in answering them; but the greatest feat of our forefathers of those generations was the deed of the men who, with pack train or wagon train, on horseback, on foot, or by boat upon the waters, pushed the frontier ever westward across the continent.

Never before had the world seen the kind of national expansion which gave our people all that part of the American continent lying west of the thirteen original states, the greatest landmark in which was the Louisiana Purchase. Our triumph in this process of expansion was indissolubly bound up with the success of our peculiar kind of federal government; and this success has been so complete that because of its very completeness we now sometimes fail to appreciate not only the all-importance but the tremendous difficulty of the problem with which our nation was originally faced.

When our forefathers joined to call into being this nation, they undertook a task for which there was but little encouraging precedent. The development of civilization from the earliest period seemed to show the truth of two propositions: in the first place, it had always proved exceedingly difficult to secure both freedom and strength in any government; and in the second place, it had always proved well-nigh impossible for a nation to expand without either breaking up or becoming a centralized tyranny. With the success of our effort to combine a strong and efficient national union, able to put down disorder at home and to maintain our honor and interest abroad, I have not now to deal. This success was signal and all-important, but it was by no means unprecedented in the same sense that our type of expansion was unprecedented.

The history of Rome and of Greece illustrates very well the two types of expansion which had taken place in ancient time, and which had been universally accepted as the only possible types up to the period when, as a nation, we ourselves began to take possession of this continent. The Grecian states performed remarkable feats of colonization, but each colony as soon as created became entirely independent of the mother state, and in after years was almost as apt to prove its enemy as its friend. Local self-government, local independence, was secured, but only by the absolute sacrifice of anything resembling national unity.

In consequence, the Greek world, for all its wonderful brilliancy and the extraordinary artistic, literary and philosophical development which has made all mankind its debtors for the ages, was yet wholly unable to withstand a formidable foreign foe, eave spasmodically. As soon as powerful, permanent empires arose on its outskirts, the Greek

states in the neighborhood of such empires fell under their sway. National power and greatness were completely sacrificed to local liberty.

With Rome the exact opposite occurred. The imperial city rose to absolute dominion over all the people of Italy and then expanded her rule over the entire civilized world by a process which kept the nation strong and united but gave no room whatever for local liberty and self-government. All other cities and countries were subject to Rome. In consequence this great and masterful race of warriors, rulers, road builders and administrators, stamped their indelible impress upon all the afterlife of our race, and yet an over-centralization ate out the vitals of their empire until it became an empty shell, so that when the barbarians came, they destroyed only what had already become worthless to the world.

The underlying viciousness of each type of expansion was plain enough and the remedy now seems simple enough. But when the fathers of the republic first formulated the constitution under which we live this remedy was untried and no one could foretell how it would work. They themselves began the experiment almost immediately by adding new states to the original thirteen. Excellent people in the East viewed this initial expansion of the country with great alarm. Exactly as during the colonial period many good people in the mother country thought if highly important that settlers should be kept out of the Ohio Valley in the interest of the fur companies, so after we had become a nation many good people on the Atlantic Coast felt grave apprehension lest they might somehow be hurt by the westward growth of the nation.

These good people shook their heads over the formation of states in the fertile Ohio Valley, which now forms part of the heart of our nation; and they declared that the destruction of the Republic had been accomplished when through the Louisiana Purchase, we acquired nearly half of what is now that same Republic's present territory. Nor was their feeling unnatural. Only the adventurous and the far-seeing can be expected heartily to welcome the process of expansion, for the nation that expands as a nation which is entering upon a great career, and with greatness there must of necessity come perils which daunt all save the most stout-hearted.

We expanded by carving the wilderness into territories and out of these territories building new states when once they had received as permanent settlers a sufficient number of our own people. Being a practical nation, we have never tried to force on any section of our new territory an unsuitable form of government merely because it was suitable for another section under different conditions. Of the territory covered by the Louisiana Purchase a portion was given statehood within a few years. Another portion has not been admitted to statehood, although a century has elapsed-although doubtless it soon will be. In each case we showed the practical governmental genius of our race by devising methods suitable to meet the actual existing needs; not by insisting upon the application of some abstract shibboleth to all our new possessions alike, no matter how incongruous this application might sometimes be.

Over by far the major part of the territory, however, our people spread in such numbers during the course of the nineteenth century, that we were able to build up state after state, each with exactly the same complete local independence in all matters affecting purely its own domestic interests as in any of the original thirteen states, each owing the same absolute realty to the Union of all the states which each of the original thirteen states also owes-and finally each having the same proportional right to its share in shaping and directing the common policy of the Union which is possessed by any other state, whether of the original thirteen or not.

This process now seems to us part of the natural order of things, but it was wholly unknown until our own people devised it. It seems to us a mere matter of course, a matter of elementary right and justice, that in the deliberations of the national representative bodies the representatives of a state which came into the Union but yesterday stand on a footing of exact and entire equality with those of the commonwealths whose sons

once signed the Declaration of Independence.

But this way of looking at the matter is purely modern, and in its origin is purely American. When Washington, during his presidency, saw new states come into the Union on a footing of complete equality with the old, every European nation which had colonies still administered them as dependencies, and every other mother country treated the colonist not as a self-governing equal, but as a subject.

The process which we began has since been followed by all the great peoples who were capable both of expansion and of self-government, and now the world accepts it as the natural process as the rule; but a century and a quarter ago it was not merely exceptional—it was unknown.

This, then, is the great historic significance of the movement of continental expansion in which the Louisiana Purchase was the most striking single achievement. It stands out in marked relief even among the feats of a nation of pioneers, a nation whose people have from the beginning been picked out by a process of natural selection from among the most enterprising individuals of the nations of Western Europe.

The acquisition of the territory is a credit to the broad and far-sighted statesmanship of the great statesmen to whom it was immediately due, and above all to the aggressive and masterful character of the hardy pioneer folk to whose restless energy these statesmen gave expression and direction, whom they followed rather than led. The history of the land comprised within the limits of the Purchase is an epitome of the entire history of our people. Within these limits we have gradually built-up state after state until now they many times over surpass in wealth, in population and in many-sided development the original thirteen states as they were when their delegates met in the Continental Congress.

The people of these states have shown themselves mighty in war with their fellow-man and mighty in strength to tame the rugged wilderness. They could not thus have conquered the forest and the prairie, the mountain and the desert, had they not possessed the great fighting virtues, the qualities which enable a people to overcome the forces of hostile men and hostile nature.

On the other hand, they could not have used aright their conquest had they not in addition possessed the qualities of self-mastery and self-restraint, the power of acting in combination with their fellows, the power of yielding obedience to the law and of building up an orderly civilization. Courage and hardihood are indispensable virtues in a people; but the people which possess no others can never rise high in the scale either of power or of culture. Great peoples must have in addition the governmental capacity which comes only when individuals fully recognize their duties to one another and to the whole body politic and are able to join together in feats of constructive statesmanship and of honest and effective administration.

The old pioneer days are gone with their roughness and their hardship, their incredible toll and their wild, half-savage romance. But the need for the pioneer virtues remains the same as ever. The peculiar frontier conditions have vanished; but the manliness and stalwart hardihood of the frontiersmen can be given even freer scope under the conditions surrounding the complex industrialism of the present day.

In this great region acquired for our people under the presidency of Jefferson, this region stretching from the Gulf to the Canadian border, from the Mississippi to the Rockies, the material and social progress has been so vast that, alike for weal and for woe, its people now share the opportunities and bear the burdens common to the entire civilized world. The problems before us are fundamentally the same east and west of the Mississippi, in the new states and in the old, and exactly the same qualities are required for their successful solution.

We meet here today to commemorate a great event, an event which marks an era in statesmanship no less than in pioneering. It is fitting that we should pay our homage in words; but we must in honor make our words good by deeds. We have every right to

take a just pride in the great deeds of our forefathers; but we show ourselves unworthy to be their descendants if we make what they did an excuse for our lying supine instead of an incentive to the effort to show ourselves by our acts worthy of them. In the administration of city, state and nation, in the management of our home life and the conduct of our business and social relations, we are bound to show certain high and fine qualities of character under penalty of seeing the whole heart of our civilization eaten out while the body still lives.

We justly pride ourselves on our marvelous material prosperity, and such prosperity must exist in order to establish a foundation upon which a higher life can be built; but unless we do in very fact build this higher life thereon, the material prosperity itself will go for but very little. Now, in 1903, in the altered conditions, we must meet the changed and changing problems with the spirit shown by the men who in 1803, and in the subsequent years, gained, explored, conquered and settled this vast territory, then a desert, now filled with thriving and populous states.

The old days were great because the men who lived in them had mighty qualities; and we must make the new days great by showing the same qualities. We must insist upon courage and resolution, upon hardihood, tenacity and fertility in resource: we must insist upon the strong, virile virtues; and we must insist no less upon the virtues of self-restraint, self-mastery, regard for the rights of others; we must show our abhorrence of cruelty, brutality and corruption, in public and in private life alike.

If we come short in any of these qualities we shall measurably fail; and if, as I believe we surely shall, we develop these qualities in the future to an even greater degree than in the past, then in the century now beginning we shall make of this Republic the freest and most orderly, the most just and most mighty nation which has ever come forth from the womb of time.

After President Roosevelt had taken his seat, the chorus sang: "Unfold Ye Portals."

When ex-President Cleveland was introduced as the greatest citizen of the world in private life there was a thundering ovation hardly second to that which had greeted President Roosevelt. Ex-President Cleveland delivered the following address:

Mr. President, Ladies and Gentlemen: The impressiveness of this occasion is greatly enhanced by reason of an atmosphere of prophecy's fulfillment which surrounds it. The thought is in our minds that we are amid awe-inspiring surroundings, where we may see and feel things foretold a century ago. We are here in recognition of the one hundredth anniversary of an event which doubled the area of the young American nation and dedicated a new and wide domain of American progress and achievement. The treaty whose completion we today commemorate was itself a prophecy of our youthful nation's mighty growth and development. At its birth prophets in waiting joyously foretold the happiness which its future promised. He who was chief actor for the United States in its negotiation, as he signed the perfected instrument, thus declared its effect and far-reaching consequences: "The instrument which we have just signed will cause no tears to be shed. It prepares ages of happiness for innumerable generations of human creatures. The Mississippi and the Missouri will see them succeed one another, truly worthy of the regard and care of Providence in the bosom of equality under just laws, freed from the errors of superstition and the scourges of bad government."

He who represented the nation with whom we negotiated, when he afterwards gave to the world his account of the transaction, declared: "The consequences of the cession of Louisiana will extend to the most distant posterity. It interests vast regions that will become by their civilization and power the rivals of Europe before another century commences," and warmed to enthusiasm by the developments already in view and greater ones promised, he added: "Who can contemplate, without vivid emotion, this spectacle

or the happiness of the present generation and the certain pledges of the prosperity of numberless generations that will follow? As these magnificent prospects the heart beats with joy in the breasts of those who were permitted to see the dawn of these bright days, and who are assured that so many happy presages will be accomplished."

There was another prophet, greater than all-prophet and priest, who, higher up the mount than others, heard more distinctly the voice of destiny, whose heart and soul were full of prophecy, and whose every faculty was tense and strong as he wrought for our nation's advancement and for the peace and contentment of his fellow-country men. From the fullness of gratitude and joy he thus wrote to one who had assisted in the consummation of this great treaty: "For myself and my country I thank you for the aid you have given in it; and I congratulate you on having lived to give these aids in a transaction replete with blessings to unborn millions of men, and which will mark the face of a portion of the globe so extensive as that which now composes the United States or America;" and when, as President, he gave notice in a message to Congress of the actual occupancy by the government of its new acquisition, he happily presaged the future, and gave assurance of his complete faith and confidence in the beneficent result of our nation's extension, in these words: "On this important acquisition, so favorable to the immediate interests of our Western citizens, so auspicious to the peace and security of the nation in general, which adds to our country territories so extensive and fertile, and to our citizens new brethren to partake of the blessings of freedom and self-government, I offer Congress and our country my sincere congratulations."

Our prophets do not live forever. They are not here to see how stupendously the growth and development of the American nation, or the domain newly acquired in their day, have during a short century outrun their anticipations and predictions.

Almost within the limits of the territory gained by the Louisiana Purchase we have already carved out twelve great states-leaving still a large residue, whose occupants are even now loudly clamoring for statehood.

Instead of the 50,000 white settlers who occupied this domain in 1803, it now contains 16,000,000 of industrious, enterprising, intelligent Americans, constituting about one-fifth of the population of all our states; and these are defiantly contesting for preminence in wealth and material success with the oldest of our states, and are their equals in every phase of advanced intelligence and refined civilization.

The states which composed the Union when its possessions were so greatly extended have since that time seen the center of the nation's population carried more than 500 miles westward by the swift and constant current of settlement toward this new domain; and the citizens or those states have seen flocking thither "new brethren to partake of the blessings of freedom and self-government" in multitudes greater than even Jefferson would have dared to foretell.

I shall not enter the field of statistics for the purpose of giving details of the development of the territory acquired under the treaty we commemorate. I have referred to such development in some of its general features by way of suggesting how distinctly the century just ended gives assurance of a startling and superabundant final fulfillment or the prophecies of its beginners.

The supreme importance of the Louisiana Purchase and its value as a national accomplishment, when seen in the incidents of its short history and in the light of its present and prospective effects, and judged solely by its palpable and independent merits, cannot be better characterized than by the adoption of the following language from the pen of a brilliant American historian: "The annexation of Louisiana was an event so portentous as to defy measurement. It gave a new race to politics and ranked in historical importance next to the Declaration of independence and the adoption of the constitution, events of which it was the logical outcome. But as a matter of diplomacy, it was unparalleled, because it cost almost nothing."

How fitting on every ground it is that the centennial of this stupendous event

should be joyously and appropriately celebrated; and that it should be celebrated here in the most populous of the states created from the territory which the Louisiana Purchase gave to us. And how in keeping it is with the character of this acquisition, and with its purpose and mission that our celebration should not waste itself on the pomp and pageantry that belong to the triumphs and spoils of war or to the rapacious disposessions of ruthless conquest. Every feature of our celebration should remind us that we memorialize a peaceful acquisition of territory for truly American uses and purposes; and we should rejoice not only because this acquisition immediately gave peace and contentment to the spirited and determined American settlers who demanded an outlet of trade to the sea, but also because it provided homes and means of livelihood for the millions of new Americans, whose coming tread fell upon the ears of the expectant fathers of the Republic, and whose stout hearts and brawny arms wrought the miracles which our celebration should interpret.

We are here at this hour to dedicate beautiful and stately edifices to the purpose of our commemoration. But as we do this, let us remember that the soil whereon we stand was a century ago dedicated to the genius of American industry and thrift. For every reason, nothing could be more appropriate as an important part of the centennial commemoration we have undertaken than the gathering together on this spot of the things that are characteristic of American effort, and which tell the story of American achievement; and how happily will this be supplemented and crowned by the generous, magnanimous and instructive contributions from other and older lands, which, standing side by side with our exhibits, shall manifest the high and friendly regard our Republic has gained among the governments of the earth, and shall demonstrate how greatly advancing civilization has fostered and stimulated the brotherhood of nations.

I cannot, however, rid myself of the feeling that the inspiration and value attending such an exposition may be anticipated and increased, if on this dedicatory occasion we promote appropriate reflections, by retrospection of some of the incidents which accompanied the event we celebrate.

We all know that long before the negotiations of the treaty of 1803 our government had a keen appreciation of the importance to American settlers in the valley of the Mississippi of an arrangement permitting their products to be deposited and exported at the entrance of that river to the sea. It will be remembered that this need of our settlers had been met in a limited and not altogether sure manner by a treaty with Spain, allowing such deposits and export to be made at the city of New Orleans. This privilege was entirely withdrawn in October 1792, the territory appurtenant to such privilege having been in the meantime transferred to France. The situation thus created was extremely delicate. There was presented to the government on the one hand the injury to western settlers through the loss of their trading outlet, and on the other by the perplexing question of affording them relief by means of diplomatic agreement, or in some other method. The abandonment of our settlers to their disheartening fate was of course not contemplated.

It cannot be denied that the conditions plainly pointed to cautious and deliberate negotiations as the way of prudence and safety. It very soon became apparent, however, that delay and too much deliberation did not suit the temper and spirit of sturdy Americans chafing under a sense of wrong and convinced that they were entitled to prompt assistance. The inhabitants of our territory bounding on the east side of the Mississippi, in a memorial addressed to the President, Senate and House of Representatives, after reciting their discouraging condition and expressing their faith in the government's disposition to extend the necessary aid, closed their memorial with these significant words: "And so far as may depend on ourselves, we tender to our country our lives and fortunes in support of such measures as Congress may deem necessary to vindicate the honor and protect the interests of the United States."

The settlers in the "states west of the Allegheny Mountains" also in a memorial to

the government clearly indicating their impatience and readiness for extreme action, declared that prompt and decisive measures were necessary, and referred to the maxim that protection and allegiance are reciprocal as being particularly applicable to their situation. They concluded their statement with these solemn words: "Without interfering in the measures that have been adopted to bring about the amicable arrangement of a difference which has grown out of the gratuitous violation of a solemn treaty, they desire that the United States may explicitly understand that their condition is critical; that the delay of a single season would be ruinous to their country, and that an imperious necessity may consequently oblige them, if they receive no aid, to adopt themselves the measures that may appear to them calculated to protect their commerce, even though those measures should produce consequences unfavorable to the harmony of the confederacy."

These representations emphasized the apprehension of those charged with governmental affairs that the course of deliberate caution and waiting, which up to that time had appeared to be the only one permissible, might be insufficient to meet the situation; and that whatever the result might be, a more pronounced position and more urgent action should be entered upon. President Jefferson wrote to a friend on the first of February 1803: "Our circumstances are so imperious as to admit of no delay as to our course, and the use of the Mississippi so indispensable that we can not hesitate one moment to hazard our existence for its maintenance." He appointed an additional envoy to co-operate with our representative, already at the French capital, in an attempt to obtain a concession that would cure the difficulty, and in a communication to him, after referring to the excitement caused by the withdrawal of the right of deposit, he thus characterized the condition which he believed confronted the nation: "On the event of this mission depend the future destinies of this republic. If we cannot by a purchase of the country insure to ourselves a course of perpetual peace and friendship with all nations, then as war cannot be far distant, it behooves us immediately to be preparing for that course-though not hastening it."

I have not recited these details for the purpose of claiming that this accelerated speed and advanced position on the part of our government had any important effect in hastening final results. I have thought it not amiss, however, to call attention to the fact that a century ago the people of this country were not seeking to gain governmental benefit by clandestine approach and cunning pretense, but were apt to plainly present their wants or grievances, and to openly demand such considerations and care from the general government as was their due under the mandate of popular rule, and that in making their demands they relied on the mutual obligations of the relationship between the governed and those invested with authority, and invoked the reciprocity in political duty which enjoins that for the people's obedience and support of government there shall be given in exchange, by the government to the people, defense of their personal rights and the assurance that in safety and peace they shall surely reap the fruits of their enterprise and labor.

It may also be well to note the efficacy of the people's call upon the government in those early days, and how quickly the response came-not by yielding to temporary gusts of popular whim and caprice-not by conferring benefits on the few at the expense of the many-but by a quick observation of the fact that the withdrawal of certain rightful privileges by another nation from American settlers had caused them distress, and by a prompt determination to relieve their distress even if the unwelcome visage of war frowned in opposition.

Another incident which, it seems to me, we may recall today with profit and satisfaction, grew out of the conduct of the President when the treaty of 1803 had been formulated and was returned to him for ratification and final completion. He was, as is well known, originally quite firm in his belief that the constitution, as it stood, did not authorize such an extension of our limits by purchase as the treaty for the acquisition of the Louisiana Territory contemplated. Holding this opinion, and at the same time

confronted with the clear conviction that the treaty with all its stupendous advantages could not be allowed to fail without positive peril, if not to our national life, at least to its most vital object and aspirations, his perplexity was increased by the receipt of an authoritative intimation that any delay in final action on the treaty might open the way to a recession on the part of France. In these circumstances, not daring to risk the delay of an amendment to the constitution prior to such final action, he proposed reconciling consistency with duty by procuring confirmation of the treaty by the Senate and compassing its unquestionable validation by a subsequent constitutional amendment.

In view of the conclusive statement since that time of this constitutional question by every branch of the government against Mr. Jefferson's original opinion and in favor of the nation's power to acquire territory as was done under the treaty of 1803, and considering the fact that we have since that time immensely increased our area by the acquisition not only of neighboring territory, but of distant islands of the sea, separated by thousands of miles from our home domain, we may be inclined to think lightly of President Jefferson's scruples concerning the acquisition of lands not only next adjacent to us, but indisputably necessary to our peace and development.

There were wise men near our President in 1803, who differed with him touching the nation's power to acquire new territory under the original provisions of the constitution; and these men did not fall to make known their dissent. Moreover, in the Senate, to which the treaty was submitted for confirmation, there was an able discussion of its constitutional validity and effectiveness. The judgment of that body on this phase of the subject was emphatically declared when out of thirty-one votes twenty-four were cast in favor of confirmation. An amendment to the constitution was afterward presented to Congress, but its first appearance was its last. It does not appear that the President interested himself in its fate, and it died at the moment of its introduction.

While in this day and generation we may wonder at the doubts which so perplexed Jefferson in 1803, and at his estimate of the limitations of our fundamental law, and may be startled when we reflect that if they had been allowed to control his action we might have lost the greatest national opportunity which has been presented to our people since the adoption of the constitution, we cannot fail at the same time to be profoundly grateful that these doubts and this estimate were those of a man sincere enough and patriotic enough to listen to wise and able counselors and to give his country the benefit of his admission of the fallibility of his judgment.

Thomas Jefferson never furnished better evidence of his greatness than when, just before the submission of the treaty to the Senate, he wrote to a distinguished Senator who differed with him on this question: "I confess that I think it important in the present case to set an example against broad construction by appealing for new power to the people. If, however, our friends shall think differently, certainly I shall acquiesce with satisfaction-confiding that the good sense of our country will correct the evil of construction when it shall produce ill effects."

A recent writer on American diplomacy, who is not suspected of partiality for Jeffersonian political doctrine, gave in strong and graceful terms a good reason for our gratitude today, when, in referring to this subject, he wrote: "It was fortunate for the future of America that we had at the head of affairs a man of such broad views of our country's future. A less able President, with the same views entertained by Jefferson as to the constitutionality of the measure, would have put aside the opportunity. Jefferson put aside his preconceived views as to the fundamental law, or subordinated them to the will of the nation, and welcomed the opportunity to open up the continent to the expansion of American democracy and free institutions."

We are glad at this hour that Jefferson was wrong in his adverse construction of the constitution, and glad that he was liberal minded enough to see that he might be wrong. And yet may we not profitably pause here long enough to contrast in our thoughts the careful and reverent manner in which the restrictions of our fundamental law were scru-

tinized a hundred years ago, with the tendency often seen by later times to flippantly attempt the adjustment of our constitution to the purposes of interest and convenience?

In conclusion, I hope I may be permitted to suggest that our thoughts and surroundings on this occasion should lead us to humble recognition of the providence of God in all that has made us a great nation. From our beginning as a people our course has been marked by concurrences and incidents so striking, so significant and so constant that only superstitious dullness or intellectual blindness will place them to the credit of luck or chance.

In the midst of our rejoicing today it is peculiarly fitting that we recall with soberness and meekness some of the happenings in connection with the great event we celebrate, which impressively illustrate the interposition of divine providence in our behalf. We sought from a nation ruled by one whose ambition was boundless and whose scheme for aggrandizement knew neither the obligations of public morality nor the restraints of good faith, the free navigation of the Mississippi River and such insignificant territory as would make such navigation useful. While our efforts toward the accomplishment of this slight result languished and were fast assuming a hopeless condition the autocrat of France suddenly commanded one of his ministers to enter into negotiations with our waiting and dispirited representatives and exclaimed: "I renounce Louisiana. It is not only New Orleans I cede, it is the whole colony, without reserve."

It was only nineteen days thereafter that the treaty transferring to us the magnificent domain comprised within the Louisiana Purchase was concluded.

This astonishing change in our prospects which dissipated the fears and apprehensions of our government and revived the promise of our perpetuity and happy destiny, came at the very moment that Bonaparte was organizing a force to occupy Louisiana Territory in the prosecution of colonial occupation and development, which, if consummated, would probably have closed the door even to the slight acquisition which we originally sought. The French colony of San Domingo was, however, a prime factor in this scheme of occupation, and it was essential to its success that this colony and Louisiana should both be included and should supplement each other. A serious revolt then raging in San Domingo delaying proceedings, the occupation of Louisiana was postponed until this revolt should be overcome. The troops sent from France to accomplish this apparently easy task were so stubbornly resisted by hundreds of thousands of freed blacks fighting against their re-enslavement, and they suffered so terribly from climatic conditions and deadly fever that after the sacrifice of 26,000 soldiers, many of whom were intended for the subsequent occupation of Louisiana, Bonaparte's plan for the occupation of both colonies miscarried. This disappointment, and the conception of new schemes of war and conquest by the restless dictator of France, and his need of money to carry out these schemes, were controlling circumstances in leading him to throw in our lap the entire Louisiana Territory. None of these circumstances were within our procurement or knowledge; but who shall say that God was not accomplishing His designs in our behalf amid the turmoil and distressing scenes of San Domingo's revolt? And how can it be said that there was no providence in the unexpected, unyielding and successful fight for continued freedom on the part of the negroes of San Domingo, or in the fatal pestilence that vied with bloody warfare in the destruction of the army of subjugation, or in the fever of war and aggression which heated the blood of Bonaparte, all combining to turn him away from the occupation of the Louisiana Territory? All these things so remote and so far out of our sight, pointed with the coercion that belongs to the decrees of God to a consummation which restored to our people peace and contentment, and secured to our nation extension and development beyond the dreams of our fathers.

Thus we may well recall in these surroundings the wonderful measure of prophecy's fulfillment within the span of a short century, the spirit, the patriotism and the civic virtue of Americana who lived a hundred years ago, and God's overruling of the wrath of man and his devious ways, for the blessing of our nation.

We are all proud of our American citizenship. Let us leave this place with this feeling stimulated by the sentiments born of the occasion. Let us appreciate more keenly than ever how vitally necessary it is to our country's weal that everyone within its citizenship should be clean minded in political aim and aspiration, sincere and honest in his conception of our country's mission, and aroused to higher and more responsive patriotism by the reflection that it is a solemn thing to belong to a people favored of God.

"America" by the full chorus and with band accompaniment followed Mr. Cleveland's address.

After the chorus Bishop E. R. Hendrix offered the dedicatory prayer. The exercises closed with an invocation by Rt. Rev. Henry C. Potter.

President Roosevelt was then escorted to the Administration building where he obtained a short rest prior to the reception and banquet given by the World's Fair Directors in his honor in the Hall of Congresses, which was elaborately decorated for the occasion. Among the other guests present were several members of the President's cabinet, ex-President Cleveland, General Nelson A. Miles, the diplomatic corps, the congressional committee and the governors of twenty states and territories, Directors and officers of the Exposition with their wives, and the Board of Lady Managers. The arrangements for this banquet were simple yet elegant. It was the most distinguished assemblage that had ever met in a St. Louis banquet hall. The ceremonies consisted of an expression of gratitude by the President of the Exposition to each class of notables present, and responses by the President of the United States, the French and Mexican ambassadors, and ex-President Cleveland.

After the dinner, the guests returned to the Administration building and later witnessed a magnificent exhibition of fireworks just south of the building.

Diplomatic Day:

May 1st was "Diplomatic Day" of the celebration. The diplomats, escorted by the Committees on Ceremonies and Reception and Entertainment, and an escort of mounted police and cavalry, proceeded to the St. Louis Club. At the head of the procession rode the President of the Exposition, ex-President Cleveland, and ex-Senator Thurston of the National Commission. About noon the brilliant cortege arrived at the Administration building and a sumptuous repast was served to over 500 guests in the Hall of Congresses. Shortly after two o'clock the diplomatic corps and their escort arrived at the palace of Liberal Arts where they were greeted by an audience of 10,000 people.

The First Vice-President of the Exposition, Corwin H. Spencer, called the assemblage to order. Rev. Dr. Carl Swensson offered the invocation. John M. Thurston was introduced as President of the Day and made an appropriate address. The President of the Exposition followed with a greeting to the representatives of the nations assembled. The French ambassador was introduced amid the strains of the "Marseillaise Hymn of Liberty" and delivered a brilliant address. The band played the Spanish "Himno de Riego" when the Spanish minister was presented and made a stirring address. The diplomatic exercises concluded with a march entitled "Thomas Jefferson" and the benediction pronounced by Rev. Dr. Samuel J. Nicolls.

Diplomatic Day was concluded with a grand reception given to the diplomatic corps at the St. Louis Club, which was participated in by the distinguished visitors and the people of St. Louis.

States' Day:

May 2nd, officially designated as "States' Day," was the occasion of a great civic parade in which 20,000 persons participated, passing over the same route taken by the military and diplomatic parades of the two previous days. This parade included in its ranks every organization of importance in the city of St. Louis, supplemented by about 4,000 workmen from the World's Fair site, with decorative floats showing various phases of World's Fair work in operation. There were also floats representative of the progress made in the various municipal departments of St. Louis, and the local federal offices were suitably represented. The grand marshal of the parade was Col. E. J. Spencer, and to him and his efficient aides belonged the credit of having surpassed all former efforts of the kind in St. Louis.

This grand civic parade was reviewed by the exposition officials, assembled governors and other distinguished guests. The exercises of the day took place in the palace of Liberal Arts and were presided over by William H. Thompson, treasurer of the Louisiana Purchase Exposition. Rev. Dr. Wm. R. Harper, president of the University of Chicago, offered the invocation. Ex-Senator William Lindsay, of the National Commission, acted as President of the Day and made a brief address. Governor Alexander M. Dockery of Missouri received an ovation when introduced and made a stirring address. Governor B. B. Odell, Jr., of New York, made a brilliant address on behalf of the assembled governors which was frequently punctuated by applause.

The exercises were closed with an eloquent benediction pronounced by Rabbi Leon Harrison, of St. Louis. When the ceremonies were at an end there was an informal reception on the platform before the crowd dispersed.

The governors of seventeen states were the chief guests at a breakfast given on Saturday morning, May 2nd, at the University Club by the Committee on State and Territorial Exhibits of the Exposition. The affair was most enjoyable and successful, and resulted in the governors pledging themselves to aid to the full extent of their power in an official and personal way to make the Exposition a success.

The Visiting Correspondents:

The dedication ceremonies were attended by nearly 100 newspaper correspondents from Washington, representing the leading papers of the United States and foreign countries. They were escorted by P. V. DeGraw, the Exposition's eastern press representative at that time, now fourth assistant postmaster-general at Washington. The train arrived over the Baltimore & Ohio about 2 p. m., Wednesday, April 29th, the correspondents being received at Union Station by a delegation of St. Louis newspaper men and taken on a trolley ride to Jefferson Barracks, one of the most interesting military stations in the world.

The military parade the following day was witnessed from the press stand directly opposite the President's reviewing stand where President Roosevelt, ex-President Cleveland, the foreign diplomats from the national capital and other distinguished guests were seated.

On Friday evening, May 1st, a dinner was tendered the Washington correspondents and some 400 other representatives of the press in the Hall of Congresses. Walter B. Stevens, the Exposition's secretary and director of ex-

ploitation, served as toastmaster, sitting between ex-President Cleveland and President Francis of the Exposition; and around the same table were gathered Senator Mark Hanna; John Mitchell, the labor leader; Maj. John M. Carson, dean of the Washington correspondents; Gen. H. C. Corbin, representing the U.S. Army; Lafayette Young, of Des Moines, IA., and P. V. DeGraw, of Washington. Mr. Stevens read a humorous poem, "To St. Louis," from the pen of W. J. Lampton, of New York, and then introduced Edw. Hay, of the national capital's famous Gridiron Club, who spoke for the Washington correspondents and also recited Joaquin Miller's "Sail On" and Louis Dodge's "Deeds of the Pen."

A handsome silver loving cup, a gift of the people of St. Louis to President Francis, was presented to the latter by Mr. Stevens. After accepting it Mr. Francis christened the cup by drinking to the health of President Roosevelt and to "the most distinguished private citizen in the world," ex-President Cleveland, who responded happily. Addresses were made by Senator Hanna, John Mitchell, President Francis, President Thomas H. Carter or the National Commission; Major Carson, Lieutenant Godfrey L. Carden, Lafayette Young and Frank A. Richardson.

The visiting correspondents were the guests the following day of the Division of Exhibits. A carriage ride over the exposition grounds was followed by a luncheon at the "Cottage" in Forest Park and here, with Director of Exhibits Skiff presiding, toasts were responded to by Howard N. Thompson, of the Associated Press; Joe Mitchell Chappell, editor of the *National Magazine*; Howard J. Rogers, chief of the department of Education; Edmund S. Hoch and John H. McGibbons, of the Division of Exhibits; Maj. Carson and Messrs. DeGraw, E. B. Hay, H. du Brenill de Pontbriand and Herman Balz, Washington correspondents, the last two speaking respectively in French and German.

In the evening the correspondents attended the Olympic Theater where Julia Marlowe was playing, and after the performance were the guests of the Exposition at a dinner given at Faust's restaurant. Here the toastmaster was Dean Carson and the speakers several of the visitors; George R. Johns, of the St. Louis *Post-Dispatch*; William Marion Reedy, of the St. Louis *Mirror*; Col. John A. Ockerson, Howard J. Rogers and Edmund S. Hoch representing the Exposition; and John Schroers, member of the Board of Directors of the Exposition and business manager of the St. Louis *Westliche Post*. From the dinner at Faust's the correspondents were escorted to the union station by a delegation or local newspaper men who saw them off on their special train for the home trip to Washington.

CHAPTER XIV

INFLUENCE OF THE DEDICATION

National Approval Emphasized—The Doubting Seaboard—Competition for Exhibit Space—Double the Assignment Demanded by Foreign Countries—Additional Buildings Provided—Outdoor Areas Utilized—Palaces Transferred to Chiefs—Installation of Exhibits

THE press reports of the extent, scope and progress of the Exposition sent forth as a result of the elaborate ceremonies of the Dedication gave a great impulse to the progress of the work of the Division of Exhibits. The formal and official announcement that the Exposition was rapidly approaching completion in all of its departments, including grounds and buildings, and that it really was to be of the magnitude and perfection promised did much to decide and improve the attitude of leading interests of the country toward the Exposition. The report of the President of the United States, and interviews with other well-known and important officials and distinguished citizens of this and other countries carried the reputation of the Exposition throughout the world. The result in the way of inquiries regarding exhibit space and requirements and response to negotiations in relation to exhibits and exhibit areas already inaugurated was very gratifying and promising indeed.

Thousands of applications for exhibit space were now being received from every quarter of the United States as well as requisitions for bulk areas from countries of North, South and Central America, and from Asia and Europe. The states of the Union not already satisfied were asking for and strenuously demanding great sections of space in practically every exhibit palace, and those foreign nations which had formally accepted the invitation to participate in the Exposition were either requesting new reservations of blocks of space, or additions to their former allotments - the demands being altogether in such amounts as could not have been granted if the exhibit palaces of the Exposition had been three times their already extraordinary dimensions. The summer of 1903 witnessed an unprecedented competition for exhibit space among domestic exhibitors and the representatives of foreign countries and exhibitors. Indeed, the contest for space became so active and the situation so tense that serious complications seemed at times to threaten. The utmost discretion under these conditions was required and exercised. To the careful administration of Director of Exhibits Skiff, whose experience foresaw this great congestion of demand and directed control of it, the gratifying adjustment of this pressing situation was due.

In the granting of exhibit areas, it was imperative to follow as closely as possible the fundamental principle that the major portion of space in the Exposition palaces as a whole be reserved for domestic exhibits. The proportion de-

cided upon in the plans of the Division of Exhibits was that a minimum of 55 per cent of the total area be assigned for domestic exhibits and a maximum of 45 per cent for foreign exhibits. This slight predominance of domestic exhibits was according to equity and precedent and is recognized as proper exposition practice. In some buildings the pressure for foreign space was tremendous and the greatest care and diplomacy had to be exercised to preserve anything like the necessary proportions. A condition that further complicated the situation was that all exhibit areas could not be allotted at the same time. While this was possible of all domestic space the exigencies of operation and progress required that the areas to be occupied by exhibits of foreign nations be awarded at irregular and uncertain intervals. With appointments of commissioners-general representing various countries succeeding each other, each month or fortnight, and the general uncertainty of the foreign situation which was present from the beginning, as to the number of nations which would finally participate, and the total space each would demand and require, the problem of awarding the proper amount or space to those nations which came first and to reserve a sufficient area to do justice to all which might follow-preserving under any exigency something like the necessary ratio between the extent of foreign and domestic areas in each building-was a task not lightly to be executed. The efforts of the Division of Exhibits proved to be fully equal to it, however, and the result as finally achieved was eminently satisfactory to all concerned and most advantageous to the perfection of the program of the Exposition. The chief aim of the management, as well as a fundamental motive of the exposition classification, was to secure a representative general participation. The skillful division of the foreign space available among the foreign countries applying for same, in proper relation to their comparative importance, insured this most desirable and gratifying result.

With double the full quota of foreign space and more demanded and with more than three times the amount of domestic space available applied for, the perfection of all of the exhibit sections, so far as extent of exhibits at least was concerned, was assured.

Departments Organized:

The completion of the organization of the Division of Exhibits was effected at this time by the inauguration of the departments of Anthropology and Physical Culture. Final arrangements for the organization and procedure of the department of Congresses which was to provide for the assembly of the International Congress of Arts and Science, and of other important congresses and conventions during the Exposition, were also made.

In addition to the twelve main exhibit palaces, with a total ground floor exhibit area of five million square feet, there had been set aside for use of the Division of Exhibits a number of buildings of the Washington University group, including one main and an annex building for the exhibits of Anthropology, three buildings for the use of the department of inter national congresses and a building and stadium for the exhibits and program of the department of Physical Culture. Other structures to be used for exhibit purposes were being erected or planned, including the arena, barns and other buildings for the great Live Stock exhibit and an aerodome and windbreaking enclosure necessary for the aeronautic trials. A number of minor buildings were being provided in connection with departments, chiefly at the expense of exhibitors, notably the cement,

foundry, metal and other buildings in the mining section, and a series of buildings in the Model Street.

Supplementing the immense areas within the authorized exhibit palaces and buildings described, a still greater extent of outdoor exhibit space, in plots of size and location required, had been placed at the disposal of the Division of Exhibits to be allotted to applicants by its various departments, making the total of this outside exhibit space 6,232,270 square feet.

The imperative demand for space, however, exceeded the possibilities of even these extensive provisions, and it was finally decided to employ the ornamental central courts in certain of the main exhibit palaces for exhibit purposes. Those in the palaces of Education and Manufactures were ordered roofed for this purpose.

The entire area finally devoted by the Exposition to exhibits and placed under the supervision of Director of Exhibits Skiff was over 11,000,000 square feet. This was about treble that offered at Chicago and did not include the Philippine reservation or the territory occupied by the buildings of the federal government. It was ten times greater than that supplied by any other than the Chicago Exposition.

In contemplating these extensive exhibit areas, it should not be forgotten that quality and character counted from the beginning for more than magnitude in the plans of the Exposition; yet these comparative figures are not without their bearing on the higher aims of the management. The greater amount of ground space and of acreage under roof were necessary to the development of the plan and scope of the Exposition. As indicated the idea was to present processes rather than products, demonstrations—living and moving exhibits. The carrying out of such purposes demanded more room than a still exposition. The fact that, immense as the grounds and buildings were at St. Louis, the space available was greatly over applied for lent itself to this main purpose. The competition of demand permitted an exposition by selection and justified insistence upon the advanced rule of movement and process.

Comprehensive Exploitation:

By September 1, 1903, the general campaign of many of the departments of exhibits for further applications for exhibit space had practically ceased. The exploitations of the division had been so thorough, through the work of its various departments, that almost every known branch of industrial, commercial, scientific, educational and social activity was represented in the demand for proper exhibit areas. Practically every nation of any importance had received allotments of exhibit space, either officially and directly or through commercial bodies or individuals. Evidence was also on all sides apparent that the exhibits of the states and territories of the Union were to be upon an extraordinary scale. Almost every state and territory had applied for space and was now actively engaged in the preliminary preparations. An incomparable array of individual exhibits from the United States was assured by the great number of applications received for space of this character. Indeed, the disposition of exhibit space for individual domestic exhibits was now resolved largely into a matter of selection. The last months of 1903 were devoted to the important work of perfecting the various classes of exhibits in this way, also to negotiating for representative displays not so far offered, and to making preparation for definite allotments

of space and to the introduction and installation of exhibits. The preliminary work-the great originating work of the Division of Exhibits-that of enlisting the interest and participation of manufacturers and producers in all parts of the world was accomplished and was a splendid, unprecedented success.

It should not, however, be thought that this great achievement was brought about without strenuous effort and considerable opposition. The inauguration of the campaign to secure exhibits found the industrial field in anything but a responsive mood. The argument was advanced that the novelty was worn off expositions-that the public was no longer attracted by them. Moreover, many of the establishments alluded to claimed to have in hand and in sight more business than they could well care for.

Classification Sustained:

The technical organization of the exhibits sections, according to the rules and classifications of the Exposition, was criticized by certain interests which desired to exhibit after ideas of their own and not according to the Exposition's plan. The scheme of organization and alignment applied to the exhibits sections of the Universal Exposition of 1904 was the most highly perfected ever devised-providing for an accurate, scientific selection and disposition in generic groups and specific classes of products and specimens completely indicating and illustrating the activities of the world. As Director of Exhibits Skiff fitly described such an exposition, "it was to constitute an encyclopedia of the world's works, a compendium of the skill and achievements of mankind." Opposition to this highly revised arrangement of exhibits developed in many quarters and proved to be more or less serious. States and foreign nations both objected to the requirements in this respect, demanding the right to make collective exhibits, that is to install their products and articles of every character in one diversified group in one building, preferably their state or national pavilion. Such a system would have disintegrated the Exposition and destroyed its high character and purpose. The utmost diplomacy and the most persevering effort were required to overcome this frequently deep-seated opposition to the Exposition's plan. Much credit is due to the Division of Exhibits for its success and the ultimate satisfaction of all concerned. The precedent established at St. Louis will doubtless be of great value to future expositions.

One after another the elements of opposition were overcome until practically the only obstacles remaining were the unwillingness of certain important combined interests to properly participate in the Exposition. This monopoly condition, always serious, now, in the work of perfecting the various sections of exhibits by securing the best in each class, became acute. In the great majority of cases, the exhibit groups were, of course, completed by merely selecting the best from among the numerous and representative exhibits offered to fill the respective classes indicated by the classification. In certain departments, however, this was not possible, as a limited number of important concerns and interests which could make the most exhibits in the classes representing their products did not, and seemingly would not, make application for space. These were chiefly the monopoly affected cases.

As heretofore indicated every possible means of persuasion was employed to influence the attitude of these great interests in favor of participating in the Exposition. Those actually interested in the progress of the industries in ques-

tion, the practical men and the creative workers, were anxious and advocated that proper demonstrations be made. This was especially apparent at conventions of various classes of engineering and industrial and mechanical experts previously referred to; upon which occasions, and in practically every instance, the position of the Exposition and its proposals and offerings were heartily endorsed. Opposition to the overtures of representatives of the Division of Exhibits continued, in certain powerful quarters, for reasons or causes as indicated. Indeed, it must be stated that the monopolistic and semi monopolistic condition of many important lines of industry finally developed to be a serious handicap upon the operations of certain departments of exhibits. Notwithstanding the convincing and repeated presentations of the chiefs in charge, a number of large, combined interests persistently refused to participate in the Exposition.

In most cases where the objection was based upon prejudice against exhibiting at expositions as a result of former unprofitable experience, the opposing arguments were overcome, and most desirable exhibits secured; but where monopoly touched the attitude of those in control of principal industries the opposition remained obdurate in spite of all proposals. In such instances it was necessary to gather together the energies of the remnants of competition existing in such independent concerns as still continued in successful and more or less extensive operation, and by such co-operation as it was possible to offer, without financial aid, induce the pledge and preparation of the best exhibits obtainable. In this manner some remarkably representative and attractive exhibits were secured, which quite fittingly constituted the complement necessary to perfect each department's exhibits as demanded by the exposition classification. The achievement of the Division of Exhibits and those exhibitors who co-operated with it in this connection proved of distinct value in the encouragement of independent industry—a fact which the monopoly interests have since ascertained.

Nations Participating:

In the meantime, assignments of exhibit space in the various exhibit palaces were being made. The complete allotment to foreign countries showed that the following nations were to participate:

Argentina	Denmark	Italy	Romania
Australia	Egypt	Japan	Russia
Austria	France	Mexico	Siam
Belgium	Germany	Monaco	South Africa
Brazil	Great Britain	Netherlands	Spain
Bulgaria	Greece	New Zealand	Sweden
Canada	Guatemala	Nicaragua	Switzerland
Ceylon	Haiti	Norway	Turkey
China	Honduras	Persia	Uruguay
Costa Rica	Hungary	Peru	Venezuela
Cuba	India	Portugal	

For the exhibits of these countries practically one million and a half square feet of space or over 32 acres were allotted. Of this area the principal European nations received something over a million square feet—about 23 acres—Germany and France leading with over 300,000 square feet each. The South American

countries received approximately 150,000 square feet, the larger areas-four-fifths of the whole-being assigned to Mexico, Brazil and Argentine. To the Orient, which was preparing an elaborate exhibit, was given in the neighborhood of 200,000 square feet, Japan alone receiving over 130,000 square feet for the installation of its great display.

The space reserved for domestic displays was allotted by the various departments of the Division of Exhibits to the great army of individual domestic exhibitors and to the states of the Union. The final allotments showed that the following states and territories had been assigned space for exhibits:

Alabama	Indian Territory	Montana	Philippines
Alaska	Iowa	Nebraska	Puerto Rico
Arizona	Kansas	Nevada	Rhode Island
Arkansas	Kentucky	New Jersey	South Dakota
California	Louisiana	New Mexico	Tennessee
Colorado	Maine	New York	Texas
Connecticut	Maryland	North Carolina	Utah
Florida	Massachusetts	North Dakota	Vermont
Georgia	Michigan	Ohio	Virginia
Idaho	Minnesota	Oklahoma	Washington
Illinois	Mississippi	Oregon	West Virginia
Indiana	Missouri	Pennsylvania	Wisconsin
Wyoming			

The greatest circumspection was exercised in this important procedure of allotting exhibit space, first in order to give fair consideration and treatment to all applicants, and second to insure the best possible selection of exhibits and exhibit settings for the Exposition. To facilitate these ends, a tentative allotment of space was first made to all acceptable applicants which, all were advised, would be made definite and permanent in each case when plans and details of exhibits and installation facades were such as to receive the approval of the respective chiefs of departments and the director of exhibits. Requirements as to exhibit outlines, facades, dimensions, were specified in a series of exhibit and installation rules early issued and now renewed with special bearing upon the particular exhibit provisionally offered by each selected applicant.

The tentative allotments of domestic exhibit space were made, generally, in October, November and December 1903. Final allotments followed as soon afterwards as plans were submitted and accepted, chiefly in December 1903, and thereafter. The accomplishment of this serious and exacting task proceeded smoothly and steadily without interruption except such as caused by the unforeseen relinquishment of space by important applicants here and there, the sudden change of whose plans was sometimes forced by altered conditions; as in the case of Russia, which on account of the war with Japan, abruptly decided to turn back the extensive areas allotted to that country during the previous year, retaining only an insignificant fraction for the use of a group of enterprising commercial exhibitors.

At this time assignments of space were also made to meet the demand of the director of concessions and admissions for numerous novelty and other selling booths awarded the privilege by the exposition management of conducting such business in the various exhibit palaces.

No legitimate objection was made by prospective exhibitors to the disposition of areas finally made. Such care was applied that all applicants realized the equity of the spaces assigned. Of course, wholesale reductions in amount of area applied for was necessary and was apparent in all assignments made to exhibitors, but when the great pressure for space from all sides was finally realized by each applicant, he made up his mind to abide by what was given and to devote special attention to the facade and the perfection of his exhibit.

So the extraordinary competition for space and the enforced curtailed allotments of same, instead of causing permanent dissatisfaction among exhibitors, really had a stimulating influence upon their later efforts in the preparation and installation of their exhibits.

The condition of competition reported, and carefully developed and directed as a part of the consummation of the plans of the Division of Exhibits, contributed possibly more than anything else to the creation and presentation in the respective exhibit palaces of the incomparable alignment of displays later reviewed at the Exposition.

The Plan of Assignments:

All negotiations for the distribution of exhibit space were of course conducted in connection with floor plans of the various exhibit palaces prepared in the draughting room of the Division of Exhibits. Applications for space were executed and assignments made necessarily many months before the buildings were ready for occupation. In preparation for the allotment of space, the floor area and formation of each exhibit palace had been carefully analyzed by the chief in charge, in co-operation with the director of exhibits and the draughting room of the division, and these areas had been subdivided into exhibit sections for foreign countries, domestic states, individual exhibitors and concessionaires with reservations for aisles. Detailed floor plans showing the disposition of every foot of space in each exhibit palace were now executed. A system of blocks were devised in order to particularly and definitely indicate the sections enclosed by the aisles. These blocks were designated by numbers and such designation was later effectively indicated in each palace by the suspension of a canvas square bearing the number of the block upon it. The aisles were likewise numbered and lettered. In this manner the area of each building was organized so that the location of all exhibit spaces and exhibits could be readily ascertained from any properly recorded reference. This condition was necessary to the proper and effective presentation of exhibits to visitors and in order to provide through the medium of guide books an accurate index of the Exposition.

On the evening of December 31, 1903, four exhibit palaces were transferred by Director of Works Taylor to Director of Exhibits Skiff, as being in every particular ready for the installation of exhibits; they were the palaces of Education, Liberal Arts, Varied industries, and Electricity. Possession of these exhibit palaces was at once assumed by the director of exhibits, who delivered them into the charge of the respective chiefs of departments. These officials immediately, or as soon as practicable, transferred their headquarters and working forces to their respective buildings. An organization looking to the care and protection of each building was promptly effected and a thorough inspection made. Where defects or inadequacies were found they were reported and promptly remedied. Few material imperfections were discovered, however, owing to previous inspections

and recommendations.

The association of the Division of Exhibits with the development and preparation of plans for the exhibit palaces of the Exposition, especially in relation to interior extent and construction, had been necessarily very close and active from the beginning. In addition to supplying estimates of the extent of space required for the various departments of exhibits, thereby determining the number and size of exhibit palaces provided, the director of exhibits was consulted as to the interior treatment and construction of the various buildings. The plans were forwarded to him for suggestions calculated to make the buildings more practical and effective as exhibit palaces. Many of these suggestions were adopted and incorporated in the finished structures.

During the period of construction careful inspections of each exhibit palace were made by the respective chiefs and other representatives of the Division of Exhibits at frequent intervals. Suggestions made by them embraced changes in size of entrance, especially for admission of very large exhibits, improvement in method of hanging doors, reinforcement of flooring and roofs in special sections, correction of exterior decorative features emblematic of character or contents of buildings, construction of aisles, treatment of walls and ceilings.

The control of the remaining exhibit palaces was transferred by the director of works to the director of exhibits as rapidly as each was completed. The last building, the palace of Forestry, Fish and Game, was delivered ready for occupancy on March 29, 1904.

Every preparation possible had already been made upon the exposition grounds to facilitate the receipt and proper disposition of exhibits on arrival. A special rate of one way for the round trip had been secured over all transportation lines in this country. Accompanying or immediately following each formal and final allotment of space, shipping directions had been sent to each exhibitor, with the exhortation that the directions as given be fully and implicitly carried out.

The System of Labels:

To facilitate the transmission of exhibits and their delivery to the proper spot in the respective exposition palaces, a system of shipping labels and tags was devised, with an abundant supply of which each exhibitor was provided and advised as to their serviceable importance. The color and inscription of these labels, as well as the tags of which they were duplicates except in size, indicated the section in the exhibit palace to which each package was destined. The labels were applied to cases and packages which admitted of pasting; the tags were for bundles and packages to which it was safer to attach such form of address. Ample supplies of these labels and tags were early sent to foreign commissioners with full instructions as to their use-for distribution among individual exhibitors. This practical and simple system of shipping labels and tags by which all exhibits were accurately and uniformly classed and sorted and plainly addressed to the President of the Exposition, proved most efficacious in securing the prompt dispatch and orderly introduction of exhibits into the Exposition grounds and buildings.

Under the Act of Congress authorizing the Exposition, foreign exhibits were

to be admitted into the United States free of duty under certain provisions to be indicated by the secretary of the treasury. Instructions in detail governing the introduction of foreign exhibits and material into the United States, and carefully setting forth all of the requirements of these special customs rulings, which provided that foreign exhibits remain in bond or duty paid, were forwarded in printed form and in quantity to the various foreign commissioners.

All exhibit consignments came to the exposition gates freight prepaid including final delivery charge. Moreover, the destination of all exhibits was neither St. Louis nor the exposition grounds, but the particular spot in each exhibit palace or elsewhere indicated by the label. This was made thoroughly known to all concerned in the shipment of exhibits. Both of these provisions were part of the shipping instructions prepared by the traffic manager and approved by the director of exhibits and had been conveyed to exhibitors immediately upon allotments of space to them. They insured quick handling and eliminated financial responsibility, disputes and confusion.

The agencies of the traffic department, and the terminal railroad, as well as those of the bureau of expedition of the Division of Exhibits were now devoted to securing prompt and safe delivery of exhibits to the palaces to which they were assigned. The traffic department and the bureau of expedition gave special attention to prompting the early shipment of displays and their continuous and rapid dispatch along the lines of transmission. The co-operation of the railroads had been enlisted and was most effective. Instructions to exhibitors and to railroad agents required that, wherever possible, exhibits for the various exhibit palaces be loaded in separate cars, so that they might be placed either in or adjacent to the proper buildings, upon tracks already laid for that purpose.

Assembling stations for exhibits were established by the railroads upon request and exhibits were there sorted into cars. The principal assembling points thus established were at the ocean entry ports and at St. Louis and East St. Louis. At the seaboard points where the foreign exhibits were received, they were assorted and loaded into cars according to buildings to which destined. At St. Louis and East St. Louis domestic exhibits were treated in the same manner. A final sorting station was established upon the exposition grounds for the disposition of such exhibits as came through loaded in mixed cars.

Customs arrangements at the principal import points were perfected also at the port of St. Louis, including the recognition and conduct by the customs authorities of the exposition enclosure as a bonded warehouse during the presence of foreign exhibits. Everything was now in readiness for the great inflow of exhibits approaching from every part of the earth, many already far on the way.

The actual work of placing exhibits and exhibit material upon the allotted sections of space in the exhibit palaces was to be performed by a private company, the general service company, with which the Exposition Company had entered into contract covering the performances of this and other services including the storage of exhibitors' packing cases. Under the terms of this contract, the general service company, whose affairs were later taken over and directed by the Exposition Company, received all exhibits and exhibit material at the points of entry into the exposition grounds, by rail or road, and effected the delivery of same to their exact destination in grounds or palaces for a stipulated charge to be paid by exhibitors.

The First Exhibit:

The first exhibit arrived upon the exposition grounds in December 1902, This was a large marine type boiler from Germany sent by the Duesseldorf Rater Company, of Duesseldorf, which was immediately installed as a part of the pre-exposition power plant. Previous to this a number of exhibits had been received and stored in St. Louis, including a portion of the exhibits of Mexico and of Minnesota and of other states. During the entire year of 1903 exhibits were regularly delivered at the exposition grounds in the shape of further parts and items of the pre-exposition and exposition power plants.

These early arrivals of exhibits were of course preliminary and special and being provided for and received long before the regular allotments of space had been made, and being for exhibition in service, constituted no part of the great caravan that was to follow. The first of this regular and greater complement of exhibits began to reach the Exposition in December 1903, and from that time the flow was steady, daily increasing until the opening of the Exposition. The greatest influx came in February, March and April 1904, when the tide of incoming exhibits reached an unprecedented flood.

From the date of the arrival of the first consignments of displays the work of their installation, promptly inaugurated, went on apace. The organization of the Division of Exhibits to expedite the shipment and distribution of exhibits extended also to expedition of installation. In each exhibit palace under the respective chief's of departments a floor staff, carefully selected and well trained, was at work, including receiving and checking clerks and a superintendent of installation. These men, who constituted an active part of the protective organization of the various buildings with the watchmen and Jefferson guards, received and checked the exhibits as delivered. They also supervised their disposition upon the proper exhibit spaces, where charge of same was assumed by exhibitors or their representatives. All expenses in relation to the installation and care of exhibits, as in the case of shipping, delivery and return charges, were assumed by exhibitors, the Exposition furnishing only directing and supervising aid; the exposition regulations absolved the company, from responsibility for loss or damage of exhibits from any cause.

Rules of Installation:

In every possible way the work of installation was accelerated. The rules promulgated by the Division of Exhibits contributed greatly to the observance of the requirements which set forth full specifications as to height and other dimensions of exhibits and facades, requirements as to fire prevention-full provision for which was demanded in all construction material used-and other physical detail. Observance was assured in advance, being insisted upon before plans of exhibits were approved and space allotted. The fact that all plans of exhibits were required to be submitted and approved before space in the various buildings was allotted constituted a very great aid to the work of installation. The provisions in the first place necessitated that exhibitors decide early and finally upon the nature and extent of the exhibits which they intended to make as well as upon the style, size, outline and detail of the facades which they were to

employ. Such early decisions in ordinary cases placed actual work of execution in order in ample time for completion, shipment and installation of exhibits and facades long before the opening of the Exposition. With exhibits and facades on the ground early and conforming in detail to all of the requirements of the Exposition, erection could proceed in prompt order.

It is difficult to convey an idea of the vastness of the task of assembling and installing the exhibits of a great universal exposition, of the tremendous strain upon energy and endurance, and of the ceaseless, incomparable activity and dispatch that are necessary to the execution of such work. No spot in the world is the scene of such activity as are the exhibit palaces of a universal exposition during the three months preceding its opening. During this period there is eternal vigil, unrelenting haste and almost desperate endeavor. The curtain is drawn, and the great stage is being prepared. There is clamor and action of stupendous nature, just as the panorama to be revealed to the public eye is to be stupendous. Nothing can equal and no one can describe the dramatic display of energy accompanying the final preparation. The most tremendous as well as exacting tasks have to be performed; ten thousand hands are at work in feverish, eager speed. The white heat of performance is reached and maintained. The bowels of the earth are dug into for the insertion of colossal foundations for the greatest dynamos and engines the world has made. Massive, impressive, dainty, rich installation structures, exquisitely delicate pagodas, colonnades, pyramids, houses, facades, booths, cases-by the thousands-are being erected. Armies of the most skilled artisans of the world are thrown together in sharp competition, striving day and night, at doubled pay for increased performance. A city complete is being constructed and equipped in each building, with streets and sewers, water pipes, gas mains, electric conduits and all connections and fixtures for service.

Only the most perfect organization and rigid administration can keep such a situation from degenerating into chaos. The capacity of the Division of Exhibits in all of its departments was tested to the fullest at this time. The trial proved the caliber of the men engaged in the work and furnished a climax of achievement to the great performance that had already been accomplished. In every phase the installation situation was well handled. Urgency, skill and efficiency were apparent on all sides. The progress of each exhibit construction was carefully followed and continuously hastened. If the representatives in charge of an exhibit did not seem to make satisfactory progress the headquarters of the exhibiting concern were notified, and imperative demand made for prompt expedition.

More or less serious obstacles were, of course, met in numerous instances. An annoying and irremediable cause of delay was the sudden abandonment by Russia of its space already referred to. Almost the full assignment of approximately 80,000 square feet of exhibit area reserved for this nation, and extending through many of the principal exposition palaces, was turned back less than two months before the opening of the Exposition. This meant the re-allotment in small sections of these great areas to exhibitors who must furnish plans of exhibits and installation, perfect them so that they would receive proper approval, and then prepare, ship and install their exhibits and facades before the opening of the Exposition, a manifestly impossible task. The greatest possible dispatch was, of course, applied to the redistribution of this abandoned space, which was disposed of to excellent advantage.

Delay also impossible to overcome was met in the installation of certain bulky or heavy exhibits, requiring special foundations or elaborate structures particularly such exhibits as the immense engines in the palace of Machinery. Again, the precipitate demand for service of water, gas, electricity, drainage, requiring special leads to and connections with exhibitors' installations, all necessarily made and required at once, resulted in confusion in numerous instances.

A serious source of delay which notwithstanding the most active and even radical measures of expedition employed by the Division of Exhibits could not be overcome was met in the steady refusal of numerous exhibitors of very fragile, delicate and costly objects to proceed until the heavier work of installation in various exhibit palaces was practically complete and danger of injury to their material reduced. This latter phase of the situation was indeed vexatious. It was, however, unavoidable and rational, being the result of experience secured by large and important exhibitors at previous expositions. The cases indicated were fortunately little more than isolated instances compared with the great array of exhibits. The progress made in every building was most gratifying, and as the closing days of April approached reports from the various departments showed the general work of installation to be practically ninety per cent completed—a condition which foreign and local experts pronounced unprecedented—unapproached even by previous exposition performance.

Last Days of Preparation:

During the last week preceding the opening of the Exposition redoubled energy was applied in each building, both day and night forces being increased by the competing exhibitors. A clause in the rules of awards which gave a ten percent credit to exhibitors whose installations were completed on time proved a great stimulus at this period as well as during the entire progress of the work of installation. The tension of the last days and nights can hardly be indicated. It was exhausting. But the reward of success was already apparent and stimulating. The vast forces were now working consciously and enthusiastically toward an achievement that had never before been attained—to success in a colossal task such as had not yet been recorded.

The completion of the installation work represented an extraordinary and exceptional performance from every point of view—in time consumed, in the tremendous amount of material, exhibits and facades placed, and in the orderly procedure that marked the work in every building. The satisfactory result and the conditions producing it were in no little degree due to the careful preparations which preceded. In the first place the provisions made for the expeditious transmission of exhibits from the point of shipment to the exposition grounds and location of same upon spot of exhibition had been thorough and proved to be most effective. The instructions issued to exhibitors in relation to the assembling and preparation of exhibits for shipment, and the packing, labeling, loading and dispatch of same, were carried out with remarkable fidelity both by foreign and domestic exhibitors. To say that all exhibits came as ordered or in cars properly loaded for the various exhibit palaces would be to seriously exaggerate. Universal conformity to instructions in relation to the forwarding of so many thousands of packages from every section of the world, passing through

so many hands before reaching destination, was impossible. Nevertheless, the manner in which exhibits arrived upon the exposition grounds and the order and dispatch with which they were delivered at their destination in the exhibit palaces and elsewhere, and then, raised in their proper place, set an entirely new example in exposition practice. To quote Director of Exhibits Skiff:

The remarkable uniformity and accuracy with which exhibitors, even those in remotest lands, carried out the shipping instructions of the division is an indication of the thoroughness of the means adopted to disseminate them and emphasize the importance of their observation; and this achievement represents not the least among the many extraordinary accomplishments of the Exposition. The exhibits were introduced into the exposition grounds, placed in their proper sections and upon their allotted sites within the exhibit palaces and elsewhere, and arranged for presentation to the public with a dispatch and preservation of order that is without precedent in exposition experience. To merely state that important fact, indeed, in no degree indicates the splendid nature of the service performed in direction and execution, and the extraordinary and admirable results obtained. Actual knowledge of the indescribable chaos, confusion and delay that has attended the installation period of previous expositions is required to appreciate the comparative ease and remarkable speed with which the exhibits were introduced and installed in the exhibit palaces at St. Louis.

In addition to this excellent achievement in order and speed, the economies effected in connection with the introduction and installation of exhibits resultant upon the system, methods and energy employed were material indeed, representing, when compared with the outlay made at Chicago, a saving to the Exposition Company of many thousands of dollars.

EXPOSITION

April 30, 1904-December 1, 1904

CHAPTER I

OPENING DAY

President Roosevelt Touched the Key—State and City Holiday The Ceremonies—Addresses by Secretary William H. Taft and Mayor Rolla Wells—Congress Represented by Joint Committee—Participation of Foreign and State Commissions—Delivery and Acceptance of the Keys

THE thirtieth day of April 1904 dawned auspiciously. The sun rose fair and with benign promise, the mists dissolved, and the crisp air of the early spring morning scattered the clouds that had hung for previous days and weeks over the city, delaying the completion of the preparations for the carnival of states and nations so eagerly anticipated. So when this anniversary, set apart for the record of labors finished and purpose accomplished, came with a smile in its skies and warmth in its greeting, the spirit of the people of St. Louis arose with corresponding fervor, for the day was ideal.

If the day was held in fond anticipation by the ordinary citizen who looked only to the personal pleasures in store, it can be well appreciated how grateful were the forces of the Exposition for a day of sunshine in which to bless the formal completion of the stupendous task that had for three years taxed their physical and mental powers to the limit of endurance.

In every community, big and little, there devolves upon a comparatively few men the duty of keeping the wheels of progress in motion. They seize upon opportunity, assume responsibility and harness result. They establish schools; they endow universities; they erect churches; they span mighty streams with bridges to meet commerce at the gate-way; they lay out parks and gardens to vitalize the lungs of cities and give health to the family; they bring wealth to maintain hospitals and asylums; they do a thousand things necessary for the public welfare and inspire and keep alive civic pride, a thing as essential to prosperity as esprit to an army corps. These men are to a community as moisture to the fields or steam to an engine.

Such men as these constituted the management of the St. Louis World's Fair. They assumed a herculean work. Inspired by an historic event and a fervent patriotism, they undertook the planning and management of a celebration commensurate with the dignity and glory of the United States Government, a celebration unequaled in the achievements of the world's history, an exposition unrivaled and uncontested in its extent, its costliness, and in its magnificence in ensemble and in detail.

The program for the opening exercises of the Exposition was prepared more with a view of being brief and dignified than elaborate and spectacular. Dignity was made the chief characteristic, to befit the occasion. The event attracted attention far and wide. Excursion parties came from all directions and extra cars

were found necessary on all regular trains. Governor Alexander M. Dockery had proclaimed a holiday throughout the state, and Mayor Rolla Wells of St. Louis had proclaimed one for the city. Many business concerns not only tendered a holiday to all employees but provided them with money for admission tickets as well. This spirit proved contagious and appealed to the pride of the city as nothing had ever done before. Approximately 200,000 people witnessed the exercises.

The purpose seemed spontaneous to make it a red-letter day for St. Louis and the Louisiana Purchase. The admissions to the grounds were greater by several thousands than on the opening day of any previous exposition in this or any other country.

It was an eminently good natured and representative assemblage and responded cheerfully to all necessary regulations for orderly details.

The March to the Monument:

The exposition officials assembled at the office of the President in the Administration building shortly before 9 o'clock in the morning, proceeding thence to the terrace below where a detachment of Jefferson guards was in waiting. The official party consisted of the President and Treasurer Thompson in the lead, followed by Director of Works Taylor and Director of Exhibits Skiff, the Vice-Presidents, the members of the Board of Directors, the National Commission and the chiefs of departments.

From the terrace the procession moved promptly at 9:30, led by the Jefferson guards under command of Lieutenant Colonel H. P. Kingsbury, and a body of two hundred Philippine scouts in regulation uniform, headed by their band. Next came the officials of the Exposition above enumerated and the Board of Lady Managers, escorted by a detachment of Jefferson guards.

Previous to the arrival of the procession from the Administration building Prince Pu Lun, Imperial Chinese Commissioner, in his decorated state carriage drove up to the Louisiana monument under escort of Louisiana Purchase Exposition officials. His retinue was brilliant with oriental costumes and trappings. As the distinguished party was shown the seats assigned to them at the base of the monument the members were the object of curious though respectful interest.

Members of the Commercial Club of Cincinnati in frock coats and silk hats were next to arrive and be shown their seats.

Mayor Wells and the city officials arrived soon thereafter and, grouped about the Prince and his retinue, extended cordial greetings.

The column from the Administration building reached the monument at 9:30 and was received by General Edmund Rice, the grand marshal, and his aides and conducted to the rostrum.

The representatives of the states and territories participating in the ceremonies of the day assembled in front of the United States Government building at 9 o'clock. Capt. Campbell King, U.S.A., with his aide, Lieutenant A. A. Parker, received the delegations upon arrival and assigned them to their appointed places in the line of march. Before proceeding the groups upon the steps of the building presented a picture in which could be found the governors of nine states, the official representative of every state of the Louisiana Purchase and of nearly every other state and territory of the United States. A detachment of Jefferson guards

led the line of march, followed by Innes' band, after which the following order was observed:

1. The Committees on Legislation and State and Territorial Exhibits.
2. Officials of the department of domestic exploitation.
3. The United States Government Board, representing the various departments of the government maintaining exhibits.
4. Representatives of the various states of the Louisiana Purchase in order of their admission into the Union.
5. Representatives of the thirteen original states in order of their adoption of the constitution.
6. Representatives of other states and territories.
7. Members of the Philippine Exposition Board.

The commissioners and representatives of foreign governments began to assemble about 8:30 in the reading room on the lower floor of the Hall of Congresses. Soon after 9 o'clock they formed in line on the plank walk leading across the quadrangle. A detachment of Jefferson guards under command of Sergeant Benjamin Otten was at the head. Next came Well's band, then the Committee on Foreign Relations, Director of Exploitation Walter B. Stevens and the commissioners and representatives of the Exposition who had been sent abroad to secure foreign participation, including Joseph Brucker, resident representative in Berlin, Jose d' Olivares, commissioner to the Argentine Republic, Chili, Uruguay, Paraguay and Bolivia; John Taylor Lewis, commissioner to Brazil and Portugal; Charles W. Kohlsaas, commissioner to Norway and Sweden; Walter Williams, commissioner to the foreign press; and Theodore Hardee, special commissioner to oriental countries.

Next came commissioners and representatives to foreign countries who have ambassadors accredited to the United States, in order of the presentation of their credentials to the Exposition. The order was as follows: Mexico, France, Germany, Great Britain and dependencies, and Italy.

Then followed commissioners and representatives of foreign governments which have ministers resident accredited to the United States, in the order of presentation of their credentials to the Exposition. These governments in their order were: Japan, China, Brazil, Cuba, Argentine, Denmark, Belgium, Nicaragua, Sweden, Siam, Portugal, Costa Rica, Guatemala, Persia, Venezuela, Holland, Norway, San Salvador, Haiti, Honduras, Bulgaria and Morocco.

Many of the foreign representatives appeared in official dress.

The Ceremonies:

It was 10:25 when the President of the Exposition took the rostrum and called the vast assemblage to order with a beautiful gavel made from a tree felled upon the exposition site and presented to him for the occasion by the St. Louis Furniture Board of Trade. This was the signal for a mighty shout from tens of thousands of throats, and hats and handkerchiefs were enthusiastically waved in the air. When the cheering had ceased Reverend Dr. Frank W. Gunsaulus of Chicago was introduced and offered an impressive invocation. Led by Dr. Gunsaulus the immense assemblage, with bowed heads, repeated the Lord's Prayer.

At the close of the prayer the President of the Exposition stepped forward

and delivered his address. His concluding words were: "Open ye gates! Swing wide ye portals! Enter herein ye sons of men! Learn the lesson here taught and gather from it inspiration for still greater accomplishments!" With them came the realization to the expectant multitude that the final triumph had been achieved and their exultation was signalized by applause and shouts, which were borne along the plazas and the aisles of the beautiful buildings and thrown back from the monumental hills supporting the Colonnade of States.

The President then introduced the treasurer of the Exposition, William H. Thompson, who with characteristic directness stated he desired to report that the Committee on Grounds and Buildings, of which he was chairman, had completed its work of preparation and awaited the public's verdict. He thereupon introduced Director of Works Taylor as the mastermind of the physical construction of the most wonderful exposition in all history.

Surrounded by the beautiful creations of his genius, Mr. Taylor made a stirring address which he concluded by delivering to the President the keys of the exhibit palaces. The director of works then presented diplomas to the members of his staff.

Sousa's band rendered Von der Stucken's march, "Louisiana," after which the President introduced Director of Exhibits Skiff and investing him with his official commission and insignia of office, transferred to him the exhibit palaces. The director of exhibits presented to the chiefs of departments in his division their credentials and badges of office. He followed this ceremony with an eloquent address to the assembled auditors. At the conclusion of his address Mr. Skiff handed to the President of the Exposition and to each of his department chiefs a catalogue of exhibits.

The "Hymn of the West," written by Edmund Clarence Stedman for the occasion, with music by John Knowles Paine, was sung by a chorus of four hundred voices.

The Mayor of St. Louis, Rolla Wells, was next introduced. His remarks, as always, well befitted the occasion.

Mayor Wells was followed by Thomas H. Carter, President of the National Commission.

President Carter was followed by United States Senator Henry E. Burnham, chairman of the Visiting Committee representing the United States Senate.

Senator Burnham was followed by James A. Tawney, of the Visiting Committee of the National House of Representatives, who was introduced by the President as, "Mr. Tawney of the Louisiana Purchase," in grateful recognition of his inestimable services on all occasions in behalf of the Exposition. Mr. Tawney's address was peculiarly interesting on account of his connection with the Exposition as chairman of the House Committee on industrial Arts and Expositions.

The next on the speaking program was the commissioner-general for Mexico, Albino R. Nuncio, dean of the foreign commissioners. In a few words he gracefully yielded to the commissioner-general for France, Michel Lagrave, who spoke on behalf of the foreign commissioners.

The next speaker was Edward H. Harriman, president of the New York World's Fair commission, who spoke on behalf of the domestic exhibitors.

The President of the Exposition, in complimentary terms, introduced the personal representative of President Roosevelt, Secretary of War William H. Taft, who delivered an address that was heard with rapt attention.

Pressing the Key at Washington:

When Secretary Taft had concluded, the most impressive of all the incidents of the ceremonies took place. The time had now come for the President of the United States to open the Exposition formally by pressing the key of the telegraph instrument which would release the mighty machinery and send the thrill of life and motion throughout the great exhibition. While the President of the Exposition stood at the base of the Louisiana Purchase Monument at St. Louis with his finger on the golden key, President Roosevelt was in a similar attitude in the famous east room of the White House in Washington. Surrounding him was a notable company assembled to witness the unique ceremony—members of the cabinet, the chief justice and associate justices of the Supreme Court, ambassadors and ministers of foreign countries, the president pro tempore of the Senate, Mr. Frye, the speaker of the House of Representatives, Mr. Cannon, and scores of other dignitaries. At 12:15 p.m. the following dispatch was sent by the President of the Exposition to Washington from the station at the Louisiana Purchase Monument:

President Francis, of the Louisiana Purchase Exposition Company, presents his compliments to the President of the United States and begs to say that the management of the Louisiana Purchase Exposition awaits the pleasure of President Roosevelt who is to transmit the electrical energy which is to unfurl the flags and start the machinery of the great Exposition.

President Roosevelt then spoke to the assembled guests in the White House as follows:

I have received from the exposition grounds the statement that the management of the Louisiana Purchase Exposition awaits the pressing of the button which is to transmit the electrical energy which is to unfurl the flags and start the machinery of the Exposition.

I wish now to greet all present, especially the representatives of the foreign nations here represented, in the name of the American people, and to thank these representatives for the parts their several countries have taken in being represented in this centennial anniversary of the greatest step in the movement which transformed the American republic from a small confederacy of states lying along the Atlantic seaboard to a continental nation.

This Exposition is primarily intended to show the progress in the industry, the science and the art, not only of the American nation, but of all other nations in the great and wonderful century which has just closed. Every department of human activity will be represented there, and perhaps I may be allowed, as honorary president of the athletic association, which, under European management, started to revive the memory of the Olympic Games, to say that I am glad that in addition to paying proper heed to the progress of industry, of science, of art, we have also paid proper heed to the development of athletic pastimes, which are useful in themselves, which are useful as showing that it is wise for nations to be able to relax as well as work.

I greet you all. I appreciate your having come here on this occasion, and in the presence of you representing the American government and the governments of the foreign nations, I here open the Louisiana Purchase Exposition.

President Roosevelt touched the key that flashed the order to open the Ex-

position at St. Louis. It was the same golden key that had performed like services on other notable occasions. It had been used by President Cleveland in starting the machinery of the Columbian Exposition of 1893. Coincident with President Roosevelt's touch a battery of artillery thundered a national salute at Washington.

The Exposition Open:

President Roosevelt's signal reached the President of the Exposition, and as the latter lifted up his hands and declared the Exposition open ten thousand flags fluttered from their masts, the fountains shot their spray into the air and from the caverns under Festival Hall the waters leaped and sent their roaring torrents down the cascades, the whirl of mighty machinery became the song of hundreds of motors and engines, two hundred thousand voices and scores of bands made the welkin ring, and the greatest of universal expositions was open.

Many congratulatory telegrams were received, chief among which was one from the President of the United States felicitating the Exposition management and the foreign commissioners upon the successful inauguration of the Louisiana Purchase Exposition.

In the exhibit palaces were arrayed the treasures of the world in fascinating detail and imposing perspective. Each palace presented a panorama of the surpassing wealth of the earth and of the art, skill and performance of mankind. Veritably the Exposition was a festival of progress, a centennial of achievement, a celebration of the rich rewards that accrue to the persevering virtues and endeavors of men.

Civilization had assembled its greatest trophies in jubilation over the perfection of its latest great acquisition, the fruition of its conquest of the vast and rich territory now so well advanced and so securely established in its arts-so splendidly redeemed to the higher uses and needs of men. A fit occasion and a splendid celebration! The offerings of the world sent joyously to Louisiana and arrayed in magnificence before the gaze of the world-the congratulations and the costly tokens of the great and older nations that had witnessed her birth and watched her growth!

The exhibits were indeed incomparable as witnessed on all sides in every exhibit palace. The appreciation felt by visitors of the splendid array in its composite, overwhelming magnificence and in its exquisite detail, was indicated by the throngs which crowded all of the palaces during the entire day and until evening when their doors were closed.

Prominent among the entertainment attractions. If not heading them, must be mentioned the music which was rendered everywhere upon the exposition grounds. In addition to the splendid performance of the great chorus and of Sousa's band assembled near the Louisiana Purchase Monument during the opening exercises, the latter organization, Well's band, the Philippine and other hands rendered programs throughout the day and evening at other points upon the grounds, giving promising suggestion of the great festival of music which was to follow during the Exposition.

The history of the opening exercises would be incomplete without some

mention of the parade of the Pike dwellers which took place in the afternoon.

In this unique procession were the representatives of nearly all of the nations of the earth, both civilized and barbarian. The variety, brilliancy and strangeness of their costumes and personal adornments lent color and picturesqueness to this memorable carnival.

The remainder of the day was spent by the joyous crowds in visiting interesting places and getting acquainted with "the lay of the land." As evening wore on many took their way homeward while the remainder lingered to regale themselves at one or another of the numerous restaurants to be found on the exposition grounds.

The celebration in no sense exaggerated the importance of the historic occasion or the Exposition which commemorated it. Both deserved the appreciation they received. The Exposition was more than had ever been claimed for it. Its extent, its beauty, its inconceivable educational excellence, its illustration of processes, its assemblage of the best products, its wonderful representation in the fields of anthropology and ethnology, its every feature stood preeminent without a rival in all the past.

Here on the banks of the Mississippi River, in the whilom wilderness of a century ago, stood an epitome of the whole world's progress, the allegory of the achievements of all ages. It was the pride of the United States, the apotheosis of the city of St. Louis.

CHAPTER II

THE EXHIBITS

A Preliminary Survey—Formal Announcement of Readiness—The Departments Epitomized—Scope and Diversity—Education and Art The World's Material Progress—Outdoor Activities—The Popular Verdict

IN addition to the succession of happy ceremonies attending the dedication of the national and state pavilions which made notable the days immediately following the opening of the Exposition, were the equally auspicious celebrations which signalized the formal opening of exhibit sections in the main exhibit palaces by the participating states and nations.

On May 12, 1904, the installation of the exhibits in the respective palaces and elsewhere upon the exposition grounds was pronounced complete and ready for public inspection. On that day a formal, official tour of inspection of exhibits was made by the officers and Board of Directors of the Exposition, accompanied by the members of the National Commission and the board of Lady Managers, the commissioners-general of the various participating foreign countries, commissioners of the respective states, and by the director, chiefs of departments and other officials of the Division of Exhibits. The route of this actual tour of inspection passed through every exhibit palace and to every part of the exposition grounds; in all it covered a distance of approximately eleven miles. Upon the completion of this tour, the following formal report was issued and published:

The National Commission, officers and Directors of the Exposition, the Board or Lady Managers and the foreign and domestic commissioners have just completed a five hours' tour of inspection of the exhibit palaces of the Exposition.

We wish to announce to the public that the exhibits are installed in all exhibit palaces and present the most marvelous collection of the accomplishments of mankind ever witnessed.

(Signed) DAVID R. FRANCIS,
President Louisiana Purchase Exposition.
THOMAS H. CARTER,
President National Commission.
M. MARGARETTA MANNING,
President Board of Lady Managers.

An attempt to indicate in any detail the character of the panorama that was presented to the eyes of this official party of inspection and which was now and from this time forward daily reviewed and enjoyed by the thousands of visitors to the Exposition would be futile. The finished array of exhibits as set forth in the various exhibit palaces and elsewhere constituted a complete record in actu-

al reproduction of the capacity and performance of the modern world. It was a comprehensive collection of the best works of man and the best collective products of society - a full and accurate reflection of civilization in its perfection as reached at the beginning of the twentieth century.

The variety of the activities of the world is well-nigh infinite. All were shown in repeated and faithful example, from simple to indescribably complex, from the pursuits and performance of the aborigine to those of the skilled artisan and the savant. The scope and the diversity of the exhibits offered in each building were stupendous.

Education and Social Economy:

In the classic palace of Education, fronting on the main plaza of the Exposition, the world's agencies and methods of education were assembled. The accumulated experience of all races and of all time in the delicate and vital matter of training the mind and developing it to its fullest power and performance were here presented and their results compared. The displays submitted in this representative collection comprehended every phase of educational activity, from primary to ultimate grades, including technical, industrial, commercial, agricultural, art and other special forms of education; also the training of defectives, the deaf, the mute and the blind. The exhibit further embraced the most improved auxiliaries and devices employed for educational purposes and complete equipment for educational institutions of every character.

In this palace was offered a highly important and instructive series of displays setting forth the progress made by the advanced nations of the world in the treatment of the important questions of Social Economy. The experience acquired and methods employed by these countries were shown in the improvement of conditions of industry and labor; the advancement of public welfare and health; the organization and regulation of provident institutions; public charities, corrective measures, including the treatment and reformation of criminals; temperance measures; social betterment movements, and municipal improvement.

These exhibits of education and social economy, effectively installed to be illustrative, fully reflected the plan and motive of the Exposition which was to provide in concrete form example and instruction which would directly bear upon the progress of the world.

The Pavilions of Art:

Of the world's achievement and progress in art a thorough representation was offered. The four great wings or pavilions of the palace of Art which crowned Art Hill and dominated the exposition picture, were crowded with art treasures of all the world. The best examples of American art were aligned in impressive setting, together with the rare products of the other principal civilized nations. France, Germany, England, Italy, Holland, Belgium, Austria, Russia, Portugal, Sweden, Norway, Denmark, Iceland, Hungary, Bulgaria, Switzerland, Argentine, Brazil, Mexico, Peru, Cuba, Canada, Japan, China and Ceylon sent representative contributions. The richest paintings and sculpture and the most exquisite products of skilled handicraft were presented in profusion, and in variety characteristic of every civilized race and every clime.

In one of the four immense wings of the palace of Art was a contemporaneous division in which were assembled works of art, chiefly paintings, produced since the opening of the World's Columbian Exposition in Chicago in 1893. Another section contained a retrospective exhibit, covering works produced between the date of the Louisiana Purchase and 1893. A third division was devoted to rare art specimens loaned from American collections, public and private, in which were exhibited many of the important masterpieces of the world.

The exhibits of sculpture were distinguished and were impressively installed. A characterizing feature of the art exhibit was the incomparable collection of exquisite and infinitely varied objects of applied art. This exhibition was especially notable because of the fact that never before had products of this character been presented in the art exhibit of a universal exposition.

Machinery and its Annex:

In the palace of Machinery, at the foot of the hill upon which arose the palace of Art, the array of exhibits was impressive indeed. Here were installed wonderful specimens of the throbbing engines, the great seething boilers and the flashing dynamos that move the world-the heavy, sinewy hand of power, resting under and supporting the delicate hand of Art. In this palace were shown in operation those marvelous devices of steel that do so much more and do it so much more accurately and skillfully and thoroughly than the puny, uncertain hands of men.

In this palace of Machinery and its annex, the Steam, Gas and Fuels building, was installed the power plant of the Exposition with its tremendous power generating and distributing units, all of the most modern and potential type. Turbine engines were at work here taking the place of the monster generators commonly required for the production of power. A single energy unit-one mass of machinery, engine and generator-weighed 720 tons and rose forty feet from its foundation above the floor of the building, carrying a flywheel of weight 300,000 pounds. Colossal generators were in operation, also gas engines of extraordinary size and variety; and machine tools and miscellaneous machinery of every character-all illustrating the generation, distribution and application of power, presented in imposing array for the inspection of the public and the study of the world.

Transportation:

In the palace of Transportation, across the plaza from the palace of Machinery, were arranged the vehicles and appurtenances of travel and conveyance. Giant locomotives, the largest and most powerful so far built, dominated the exhibits here, surrounded by other locomotives and railway cars, passenger and freight, of many types and from various lands. In this building, as in the other exhibit palaces of the Exposition, the great progress of the world was shown by striking contrasts. The automobile and the airship were displayed in one section of the palace of Transportation, while the primitive ox cart of Mexico, with wheels hewn out of the solid tree trunk, was presented in another. The evolution of the locomotive and of railway travel were illustrated by a most remarkably complete and interesting retrospective exhibit. How all nations travel by land and water was graphically shown.

The richest trains of railway palace cars competed in luxury and perfect appointments with the sumptuous cabins of the latest leviathans of the sea. The motor boat, the exquisite pleasure yacht, the naphtha launch and the sportive cat-boat were presented in classified alignment, indicating how thoroughly and industriously man has worked to bring water under his domain as well and almost as completely as land.

Mechanical travel was shown to have marvelously mastered the distances of the earth and to be fast invading the region of the short haul. That it had not yet replaced the animal-drawn vehicle, however, was strikingly emphasized. A contemplation of the extensive sections of this exhibit of the world's means of locomotion devoted to carriages, wagons, buggies, trucks, carts, delivery wagons, hearses, convinced that the inroad upon the field of travel and performance of these vehicles, while actual, had not reached the point of noticeable interference. The variety of exquisite designs of the elaborate array of carriages presented almost equaled that of the incomparably rich display of automobiles; while the styles, sizes and capacities of the animal drawn trucks rivaled those of the representative presentation of auto trucks. The art, the wealth and the attention applied to the fixtures of animal travel were further reflected in the remarkably handsome exhibits of saddlery and harness, and its other auxiliaries and appurtenances. As a whole, this exhibit of the methods and equipment of travel was a strikingly interesting panorama; a fact evidenced by the lively appreciation of its features—an interest which never waned.

The exhibits of the palace of Transportation and of the palace of Machinery, joined with those presented in the palace of Electricity and the palace of Mines and Metallurgy, constituted a basic index to the material progress of the world. The exhibits in the palace of Electricity represented truly a congregation of modern marvels. Here were installed the wireless telegraph and telephone, the automatic telephone - all in operation - the astonishing electrical power and light producers and transformers, the distance-reducing motors and storage batteries, the miracle-working machines of electro-chemistry - also all in operation - and the other marvels that electrical science and invention have added to the achievement and equipment of the world. The palace of Electricity was a treasure house of modern attainment. Its splendid and brilliant illumination at night was symbolical of its character and promise. It stood as a beacon light along the highway of civilization, towering up over the past and casting its brilliant flood of light far into the pathway of the future.

Mines and Metallurgy:

In the palace of Mines and Metallurgy and the adjacent Mining Gulch, the sinews of the earth were exposed. Mineral wealth of every character and from every state, from the native deposit on up to the final, finished form, whether of precious metal or stone, whether raw sand or clay, or lime or cement or finished brick or wall, whether of oil or water or mercury, were shown together with the devices, great and small, ponderous and exquisite, employed to locate them and transform them into products which serve the needs of society. Mining machinery, also metallurgical equipment in operation, oil and artesian wells at work, with all of their corollaries, were presented in product-rendering performance. A working foundry, coal, lead and zinc mining, also a gold mining and reducing plant, all on a practical working scale, together with a particularly impressive

array of the products of modern metallurgy, were features of this extraordinary exhibit which was pronounced to be one of the most comprehensive and illustrative of this character ever installed for public inspection.

Liberal Arts:

Opposite the palace of Mines and Metallurgy, in a palace almost equally imposing, were arrayed the exhibits of Liberal Arts. Here color and precision had sway. The passage from the sterner tasks of life to its more refined and familiar performance was extensively noted. Civil, military, architectural and municipal engineering and their feats of phenomenal modern accomplishments were themes of one of the important classes of exhibits here; while the graphic arts, photography, medicine and surgery led into the field of more varied and subtle social achievement.

The graphic arts report the progress which the more basic industries indicate. A triumphant festival of the art preservative was assembled in the palace of Liberal Arts. Typesetting and printing machinery of all kinds and representing the latest inventions were installed here, along with every other latest device and method employed to reproduce and preserve the passing life and color of the world. Printing presses in operation completed the task of record making begun by the typesetting machines. Exhibits illustrating the manufacture of paper, also handsome exhibits of books and book binding further contributed to the representative character of this display, which was especially notable and interesting for its convincing illustration of how close the products of the graphic arts are approaching those of the fine arts - illustrations which were presented in perfection and abundance. This was likewise true of the strikingly refined creations of modern photography which were submitted in interesting subject and remarkable variety.

Modern surgery was exemplified by extensive and highly graduated exhibits as were the science and practice of medicine and the chemical and pharmaceutical arts. Displays of wonderful instruments of precision, delicate scientific and philosophic apparatus; apparatus for geography, cosmography and topography; maps, globes, charts, atlases; rare collections of coins and medals; exhibits of theatrical equipment; and an extraordinary exhibit of musical instruments of every variety and of the latest as well as the most ancient type were other principal and interesting displays noted. Including the great organ in Festival Hall and its other extraordinary items and features, the display of musical instruments was indeed an exposition in itself. This classification is true also and separately of the extraordinary exhibit of graphic arts and medicine and surgery described, which were placed with such care and elaboration before the admiring gaze of the public.

Manufactures and Varied Industries:

Two of the largest palaces on the exposition grounds were filled with displays of the world's manufactures, submitted in fascinating array and in almost infinite variety. In the palaces of Manufacturers and Varied Industries was installed in settings, simple, novel, ornate and exquisite, an endless profusion of those products of manufacture and industrial art, of substantial and of dainty

form and character which come into contact with the daily life of the whole civilized population of the earth. The list of displays was indeed formidable; the list of subjects alone was extensive.

Apparel, the universal badge of civilization, was an important feature of this vast exposition of manufactures. It was presented in every variety for the protection and decoration of mankind—clothing, hats, caps, boots, shoes, shirts, hose, gloves, gowns, millinery, furs—garments representative of every need and demand and grade of society, from the coarse corduroy and overall and leather jacket of the laborer, the impervious rubber suit of the sailor, the severe uniform of the soldier to the latest exquisite creation of the Parisian modiste. Women's wear particularly was presented in diversity and profusion. The fabrics of which all of these practical and dainty garments of mankind and their auxiliaries are made—cotton, linen, wool, silk, lace, embroidery, leather, rubber, fur—were shown in innumerable forms, stages of preparation, designs and grades of finish.

The exhibits of articles and materials for personal adornment were continued in the jewelry sections. These were installed with a detail and general magnificence hitherto unparalleled. Many exhibits in this brilliant series were indescribably rich and almost fabulous in the value of their collective items, representing the rarest products of modern art applied to the combination of precious metals and precious stones. Many displays of this character were of such superior order and workmanship as to be entitled to exhibition with similar displays of applied art in the palace of Art. An operating exhibit of diamond-cutting was notable among the jewelry and precious stone displays. Here the rare gems employed for personal adornment were shown in the form of their discovery in the earth and on through the various stages of preparation to the finished and set jewels of beauty and great value. The variety of articles prepared for personal use extended into numerous other sections of the manufactures display. Many handsome and attractively installed exhibits of fancy and special articles made of leather, rubber and other materials, household and toilet articles, trunks, hand bags and traveling equipment were presented.

That great and important class of materials employed in house furnishing, decoration and equipment was represented by perhaps the most extensive and elaborate series of exhibits in the two great buildings, if not upon the exposition grounds. Furniture, upholstery, tapestries, trimmings, curtains, wall covering, carpets, rugs, were shown in unlimited profusion, elegance and variety. Displays of this character, however, were only an intimation of the whole. The complete series of exhibits of this division comprised all of the necessary and decorative furnishings of the house beautiful and house comfortable, equipment utilitarian as well as elegant, the range extending from heating apparatus and systems to the richest interior decorations, stained glass windows and elaborate wall frescoes; from cooking equipment and cooking utensils to the most exquisite and elaborate tableware, gold and silver, china, glass, cutlery, and linen decorations and coverings; from plumbing supplies to gas and electric light fixtures; from laundry and house cleaning apparatus and auxiliaries to every article for the toilet, for dressing table, as well as for the dressing room, the sleeping apartment, the dining room, the parlor, the reception hall and for all of the service sections of the house—whether public or private house-domestic, commercial or state.

These remarkably diversified articles or equipment for the cottage, the man-

sion, the office and the public palace were presented in individual and in combination setting. Rooms and suites of rooms were shown equipped complete.

The individual displays of decorative and ornamental articles was most elaborate and extended into the utmost realms of industrial art. One rich exhibit after another was shown of statuary, bronzes, marbles, art pottery, lamps, electroliers, clocks, bric-a-brac-the most profuse and elaborate series of displays of this character, indeed that had ever been installed.

Associated with the exhibits of house furnishing and equipment were those of materials and supplies employed in building construction. Extensive and representative displays of this nature were presented, notably a number of exhibits of hardware, several of which were arranged on a scale so comprehensive and presented in settings of such elaborate and effective character as to compel universal admiration.

in all respects this tremendous exhibit of manufactures was comprehensive, interesting and instructive. It illustrated strikingly the international, rather the universal character of the Exposition. While all of the nations participated in other exhibit sections, here they joined in a really glorious concourse of the familiar arts of civilization. Particularly was this true in relation to the great exhibit of interior decoration to which brief reference has been made. The world had never before seen such a complete presentation of this subject, so interesting and close to all. One room and suite led into another, designed, constructed, decorated and furnished by special artists rooms unique, elaborate, artistic, practical - the whole an exposition of art as applied to the home and the modern commercial and public building that was a revelation. The displays in this class as well as the superior and varied displays of industrial art in all of its phases were a positive and gratifying reflection of the versatility and wealth of the world, as well as of the growing refinement of the great body of its citizenship.

Agriculture and Horticulture:

The products of the factory, everywhere displayed, rivaled but did not surpass those of the field. In the palace of Agriculture, miles of exhibits, assembled from the farms of the earth, stood installed. Here the nations were shown in an impressive competition of natural advantages and industrious, enlightened husbandry; while the manufactures of the implements that promote the yield of the soil and its harvest vied with each other and with those which produce the machinery that transforms this garnered wealth into the food and other necessities and luxuries of life.

Wheat, corn, oats, rice, tobacco, cotton--every seed that grows into grain or leaf or pod or other useful form--was installed with the precision and importance demanded by the fundamental part it plays in supplying the increasing wants of the world.

The array of individual exhibits of this character presented by the respective states of the Union undoubtedly constituted the most resplendent review of the tilled and recovered wealth of the earth that has ever been gathered for the inspection and reassurance of its people. The abundance, variety and excellence of yield exhibited and the elaborate and impressive character of the exhibits and their installations or settings - that of state after state - proclaimed the vigor and

growing strength of the new world to the old in unequivocal terms. Particularly was the potential yield of that section covered by the Louisiana Purchase emphasized in this striking array of exhibits.

A central position was given to a series of elaborate special displays of cotton, corn and tobacco, installed in co-operation by groups of states for the purpose of thoroughly illustrating the culture of these crops and their conversion into marketable products. The evolution of the grain, the leaf and the fibre to its final salable form was interestingly presented.

The exhibit of agriculture was notably international. The wines of France were shown along with the wines of Germany, the wines of Portugal, the wines of Spain, and the wines of California, New York, Virginia and Missouri, and other states. The notable progress of the United States in wine culture was indicated by these displays. The tea of Japan was shown in competition with the tea of Formosa and the tea of Ceylon and India. The coffee of Brazil was presented in contrast with that of Mexico and the other coffee-producing countries. The yields of the widely separated wheat areas of the earth were compared and the future possibilities indicated - a most interesting study for the economist and the statesman as well as for the agriculturist. The analysis of the world's corn yield offered was particularly interesting and significant.

Every phase of agriculture as practiced in all parts of the world was indicated, and the advance in agricultural science, method and equipment was emphasized. A twentieth-century Missouri farm was shown as in operation; also a twentieth-century dairy. The improvements resulting from the availability by the farmer of cheap power through the perfected steel windmill and the small gasoline engine were prominently reflected. The displays of improved agricultural equipment were extensive. The improvements evident over the implements and machinery exhibited and used in 1893 were so marked as not to be considered, the comparison being drawn between 1903 and 1904.

The advancement toward perfection in food-making and preparing machinery was even more noticeable. Operating bakeries, confectioneries and cuisines dotted the palace of Agriculture. Innovations, improvements and refinements in foods were shown everywhere, from every variety of the ever present breakfast food to the telltale examples of a pure food exhibit, which served as a censor to the food-producing and a warning and a guide to the food-consuming world.

Exhibits were presented in the palace of Agriculture of every character to make a complete exposition of the science and art of agriculture, including its initial and final stages, as well as the distribution, conversion, value and employment of its yield.

The displays of the department of Horticulture were equally representative and interesting and even more attractive. Redolent fruit is the blush of the soil while flowers are its crowning, smiling beauty. The hardy apple and the regal rose of the North were offered in contrast with the luscious fruit and gorgeous flora of the tropics, the Orient and the offerings of other lands. The series of displays presented was indeed rich and profuse, as well as varied and comprehensive. It included exhibits of horticultural implements and methods, as well as every kind of products.

In this palace also the growing wealth of the United States marked the importance. The royal yield of California grouped alongside the rich and abundant

product of Missouri, Arkansas, Iowa, Colorado, Michigan, New York and other states constituted a display that almost precluded competition. It was a festival of color and riches, a review of nature's wealth and bloom such as might inspire the brush of an artist as it did confirm the confidence and stimulate the ambition of the nation. The grouping of each state's exhibit was a work of art and the special installations in some cases rivaled in beauty the exquisite exhibits they framed.

Forestry, Fish and Game:

In the palace of Forestry, Fish and Game, also, the arts of installation vied with the wealth of material presented. The forest and stream had been effectively introduced into this palace, and together with their semblance and atmosphere were shown their economic products. Many nations and states contributed to this representative and highly instructive display. The utilization of woods of every zone was illustrated by numerous examples in partially prepared and finished state and in many cases by the manufactured objects. Wood fibre rugs in successful imitation of silk and fancy ribbons of wood were shown together with rich mahogany panels, great logs and slabs, and heavy timbers for structural purposes. The variety of exhibits which indicated the refined forms into which wood is wrought and applied to social use was even more extraordinary than the variety of woods shown. Japan furnished a most interesting and instructive exhibit of achievement and possibilities in this direction. The beauty of woods finished to display and emphasize the natural grain was effectively illustrated, and the application of woods commonly regarded as only fit for coarser usage to decorative purposes was strikingly demonstrated.

The forestry display reflected the realization that is growing upon the world and especially upon the United States, of the need to protect and perpetuate this phase of nature's generous supply of wealth given to satisfy the needs of man and grievously abused by his prodigality. This subject was treated exhaustively and instructively by a series of displays in which were included carefully prepared exhibits of forest protection and culture as practiced by many of the states, also by the federal government and by a number of foreign nations. From forest culture the display led into forest life. Exhibits of game of all kinds, large and small, animal, fish and fowl, were presented in numerous attractive installations. This was especially true of the live fish exhibits which were made by a number of states in salt and fresh water pools, streams and aquariums. Exhibits illustrating the salmon fishing and canning industries, including a remarkable hatchery, were presented. The exhibits in this building proved immediately and notably popular with the public, which found in them a response to that indestructible yearning for contact with nature which exists in every breast.

The Anthropology Reservation:

Back of the palace of Forestry, Fish and Game stretched the extensive sloping areas devoted to the exhibits of Anthropology. Here were located, housed in tepees and other primitive dwellings of characteristic type and construction,

members of most of the aboriginal tribes of the earth. Practically every tribe of the American Indian was represented in this unique and extraordinary gathering. Other delegations were a group of giant Patagonian Indians, a group of African pygmies and a group of Ainus, aboriginal inhabitants of Japan. A distinctive feature of this primitive race exhibit was an American Indian school in full session and with large attendance.

Prominent among the exhibits of Anthropology, representing the higher civilizations, was the famous collection of Queen Victoria's Jubilee presents, also an exhibit made by the Vatican of Rome and a series of rare historical and archeological displays which were presented in the Anthropology building and the Hall of Congresses.

Upon the slope rising to the south of the Anthropology reservation was installed the great exhibit of the races and resources of the Philippine islands, a display the equal of which as a faithful portrayal and reproduction of the life and civilization of a whole people had never been seen before. The principal tribes of the islands were presented in native habitations of their own construction and engaged in native industries and pastimes. These exhibits were supplemented by other structures for exhibit and administrative purposes - the contents of the former elaborately setting forth the natural and industrial products of the islands. All buildings were of characteristic design and construction illustrative of the architecture, native and Spanish, of the archipelago. This great exhibit covered forty-seven acres of ground, embraced almost 100 buildings, with 1,100 natives, and was perfect in every detail, including a reproduction of the civilized life, military organization, as well as of the water and tree life of certain tribes of the Philippines. As a whole it constituted an extraordinary supplement to the interesting general exhibit of Anthropology.

Physical Culture:

At the western end of the exposition grounds were the stadium and gymnasium provided for the exhibits of Physical Culture. In the gymnasium building were installed displays of paraphernalia for field sports, athletics and athletic training, the most notable of which was the equipment of the gymnasium itself. This was a remarkably complete and superior exhibit representing a model modern gymnasium, comprehensive and perfect in organization, appointment and installation. The principal exhibits of physical culture were of course the active athletic competitions which were held at practically daily intervals in and about the stadium throughout the entire exposition season.

Every other section of the extensive outdoor areas which had been assigned for exhibits was similarly well applied or occupied. This was particularly true of the sloping areas surrounding the palace of Agriculture. A portion of this ground was occupied by working displays of windmills, traction engines and other similar bulky farm apparatus. The greater section was transformed into beautiful park stretches with graceful groups of trees, shrubs and foliage plants and dotted by flower beds and lily ponds, the whole constituting an elaborate, growing exhibit of horticulture and a practical illustration of landscape architecture and gardening. A centerpiece of this outside horticultural display was a great floral clock the dial of which was wrought in varicolored plants, and which already gave promise to be one of the marvels and magnet of the Exposition.

Upon areas surrounding the palace of Forestry, Fish and Game were installed growing displays of forestry and live exhibits of game. Adjoining the palace of Transportation and elsewhere were arranged railway track and railway signal exhibits, while other interesting outdoor and specially installed displays such as the DeForest wireless telegraph tower, Himalaya's remarkable solar energy exhibit, the British low temperature exhibit and a model municipal street lined with buildings of a model city, spotted the exposition grounds. The interesting and characteristic displays of the Mining Gulch have already been mentioned. A number of the foreign national pavilions also contained important exhibits, while the national and state pavilions were by virtue of their handsome design and rich interior finish exhibits in themselves. Beyond the palace of Horticulture and extending to the southern limits of the exposition grounds were the extensive sections and buildings assigned to the great Live Stock exhibit.

The Government Exhibit:

The representation of the industrial, artistic, educational and other activities of the world in general was supplemented by exhibits illustrative of special functions and branches of the governments of different nations. Chief among exhibits of this character was that of the United States government which presented an interesting and important series of displays setting forth the activities and service performed by each of its principal departments. In many cases these exhibits were installed in the regular palaces of the Exposition as required by its classification, and these have in a general way already been indicated; but in addition to such exhibits were a greater number which were installed independently and elaborately in the handsome building erected at great expense by the federal government for this purpose. In this building were shown in attractive manner the operation of the Post Office department especially in its more interesting phases and relations to the public, also the many and varied activities of the department of Agriculture and their vital part in the public welfare - functions extending from an analysis of the soils and their improvement to the analysis and classification of foods - soil yield in its last stage. The service and forward movement of the Army and Navy departments were illustrated by numerous carefully prepared and interesting exhibits, including operating installations of ordnance; the Treasury department among other exhibits presented a working mint; the department of the interior illustrated the extensive and important operations of the geological survey; the department of state, the department of Justice and the new and active department of Commerce and Industry each presented exhibits illustrative of its functions and the methods employed to discharge them. Of especial interest were the exhibits of fish culture and varieties shown in a handsome and elaborately installed aquarium erected near the Government building and the exhibit of game and plumage birds of the United States presented in an immense bird cage which rose high among the trees in an adjacent ravine. In another portion of the exposition grounds, the Life-saving service of the government was illustrated by a popular exhibit in the form of a typical life saving station erected upon the edge of an extensive pool in which actual demonstrations of the method and apparatus of life-saving at sea were given every day.

Processes as Well as Products:

Such in general and in briefest mention was the panorama of exhibits assembled and spread by the Exposition of 1904 before the world-exhibits of its own creation, assembled for the special inspection, comparison, entertainment and improvement of its visitors. As vast as the collection was no part of it was uninteresting. The display was monotonous in no particular. It was not a dead array. Color and life, infinite variety and activity, process as well as product exhibits characterized every section. A working school for the blind and deaf and dumb, in the palace of Education, with daily sessions, and a complete commercial college in its own building and with full curriculum and corps of professors had their antithesis in the daily dances and crude arts of the semi-barbaric Igorottes, the Pygmies, and other primitive tribes, while the marvels of electro-chemistry in the palace of Electricity were matched by those of radium as presented in the Government building and locomotive tests in the palace of Transportation were paralleled by boiler, turbine, dynamo, and gas engine tests in the palace of Machinery and in the Steam, Gas and Fuels building, and by gold reproduction and coal energy tests in the Mining Gulch. A complete shoe factory in the palace of Manufactures was the center of an installation of operating exhibits of manufactures which extended through both of the large palaces devoted to exhibits of this character. The making of a magazine - preparation, printing and distribution - in the palace of Liberal Arts was set forth in faithful detail; likewise, the making of butter by the model dairy and the making of pastry by the French bakery in the palace of Agriculture.

To the diversified life of the Exposition the great international participation added universal character. This was its distinctive feature. The extent of the foreign sections was notable in every palace and was equaled only by their importance and their exquisite installations. The life, civilization and progress of practically every nation of the world were reflected if not in detail set forth. The representation was complete as to the respective sections, zones and races of the earth-the natural wealth and the social and industrial growth, conditions and importance of each being exhaustively illustrated by characteristic examples. This thoroughness of universal participation was apparent to all; while supplying to the public an actual silhouette of the civilization and progress of the world it later procured for the Exposition from experts of all nations the verdict of being the most complete concourse of the world's arts and achievements ever assembled for review. With the special features, experiments and competitions which were to follow during the exposition period and the assembling of the various conventions and congresses representing practically all of the social, industrial and scientific activities, it promised to amply fulfill the intentions and aspirations of the exposition management to make it a true and complete festival of progress which would accurately mark the advancement of the whole world, and comparatively that of each nation as established by actual evidence at the beginning of the twentieth century.

The Public Interest:

The interest displayed by the visiting public in the exhibits of the Exposition was phenomenal and increased as the weeks passed and displays and sections were made more perfect and attractive. Every day the great palaces were crowd-

ed from the moment of opening in the morning to the hour of closing in the evening, and in the cases of the palaces of Electricity and Machinery, which were kept open after sunset, until late at night. The close inspection given to the especially meritorious features of the vast array of exhibits was indeed notable and evidenced a discrimination of taste and judgment reassuring of the intelligence and culture of the country. Evidences of deep interest and admiration were everywhere, and expressions of surprise and commendation unbounded. The verdict of the people upon the Exposition and its exhibits was a continuous ovation.

Every facility in addition to the provisions for public comfort already specified was provided to assist the public in making a thorough and intelligent inspection of the exhibits. An official catalogue prepared under the supervision of the director of exhibits and by the respective exhibit departments was published and offered in convenient form as a guide to the displays in each palace or wherever else installed upon the exposition grounds. The more important and interesting exhibits were specially indicated and in some cases described in the official guide.

The reason and the result of the great care that had been given to the installation of exhibits were now apparent and appreciated. Three objects were sought in displaying exhibits; first, a thorough representation of the material articles and processes presented, requiring sincere fidelity to detail; second, the investment of the exhibits with elements of attraction, which end was secured generally by handsome and unique forms of installation and elaborate settings; third, such arrangement of exhibits as would permit easy inspection. In each of these respects the exhibits at the St. Louis Exposition were far in advance of those of any other. The installation effects secured in all of the exhibit palaces were notably complete and attractive, in some of the sections of each palace the installations presented being altogether unprecedented in effective arrangement.

Marked facility in the system of aisles provided in each palace was also apparent, as it was in the interior arrangement of the buildings as a whole, including light, ventilation, entrances and exits and general interior construction.

A feature of each exhibit palace was the novelty booths installed at intervals in convenient locations, in which every variety of novelty and souvenir might be purchased; most of these were arranged in handsome individual or collective bazaar setting. These bits of lighter color were welcome to the eye overwhelmed by the successions of marvels in art and industry.

CHAPTER III

THE MUSIC

Festival Hall—An Exquisite Altar of Art—Bands of Many Nations—Tyrolean Alps—Symphony Concerts—Famous Conductors—Popular Concerts—Organ Recitals—Choral Contests—Massed Bands—Programs Educational—An Appropriation of \$450,000 Made Available

A GREAT attraction of the Exposition was its music. Bands from all parts of the United States and the world supplied entertainment for the exposition visitors. In the Festival Hall was the great pipe organ, electrically controlled, upon which were given concerts by leading organists of this and other countries; in the Tyrolean Alps, as well as in Festival Hall, was the splendid exposition orchestra of eighty-two pieces, playing under distinguished direction, later to be led by renowned conductors of the world. In the Philippine reservation, was the splendid Constabulary band, also the Philippine Scouts band; in the Mexican pavilion, the Mexican band; in the Government building, the Marine and other famous bands; at the Indian School, the Indian band. On the handsome band pavilions, placed at prominent points throughout the exposition grounds, were the foremost bands of America, with the most celebrated bands of Europe to follow and share the growing appreciation and applause—all engaged at great outlay by the exposition management. Besides the symphony concerts by the exposition orchestra in Festival Hall, with vocal numbers by soloists of highest reputation, programs of popular orchestra concerts were also to be rendered there; also programs of choral concerts which had been arranged, while provision has been made for great choral performances and contests at succeeding intervals during the Exposition.

The musical features of the Exposition were in accord with its extraordinary scope and superior character. To say that they were unsurpassed does not properly indicate their quality, variety and importance. Indeed, never at any time or in any place before had there been assembled such aggregations of talent nor had anything like such incomparable programs and events of music ever been presented. Director of Exhibits Skiff in his official report makes appreciative reference to the great festival—rather carnival of music which the Exposition provided for its visitors:

The character, variety and profusion of the music offered by the Exposition was unprecedented. Never before had been accorded to the general public or the public of any part of the world the opportunity of enjoying in one place and during one season music such as was rendered by the celebrated bands, organizations and artists assembled upon the exposition grounds from April 30th to December 1st, 1904. The best talent procurable in Europe and America was obtained and employed in this service. The personnel and extent of the organizations engaged and the number, variety and character of programs offered were, indeed, extraordinary. The ex-

position orchestra headed by Messrs. Komzak, Heuberger, Ernst, and Bendix, the band of the Garde Republicaine of France, the Grenadier Guards band of England, the Berlin band of Germany (the three most representative bands of Europe), the Mexican band, the Philippine bands, Sousa's band and numerous others of the United States, together with the great exposition organ presided over by the incomparable Guilmant and other renowned artiste, represent some of the principal parts of the great musical galaxy assembled at the Exposition which rendered a succession of programs the like of which has never been approached and will not soon be offered again.

The appropriation made by the Exposition Company for music was unprecedented and established a record in the way of formal public recognition of that popular and universal art. The sum of \$450,000 had been voted by the Board of Directors for musical features and events. In addition, a concert hall was provided at immense cost-one of the most beautiful ever raised Festival Hall, described as "An exquisite Altar of Art, at the foot of which worshiped pilgrims from all the nations of the earth."

The practically unlimited funds available enabled the chief in charge of the bureau of music to select the best talent and to secure the presence and service upon the exposition grounds of the greatest musical organizations of the world. The negotiations of the bureau of music in this respect were especially successful as were its operations and conduct in every direction. The utmost vigilance was exercised to safeguard the great amount of money available in order to make it yield the best results for the public and the Exposition. The greatest care was also applied in the arrangement of programs and in the preparation and conduct of the schedule of musical events presented.

The Character of the Music:

The character of the programs to be rendered received serious consideration on the part of the bureau. After considerable discussion and consultation with representative musicians of the country it was decided that good high-grade music should be played at all concerts though not of too severe a nature. This policy was constantly carried out and never did the management take any backward steps; consequently, the influence of the concerts upon the musical taste of the people who visited the Exposition, could not but be the best.

For the satisfactory and successful administration of the bureau of music much credit is due George D. Markham, chief, and George W. Stewart and Ernest H. Kroeger, manager of the bureau and master of programs respectively. The following summary of the musical features, programs and events offered by the Exposition is condensed from the report of Mr. Markham:

The general plan of music for the Exposition contemplated the liberal use of military bands playing in the open air; the engagement of a satisfactory high-grade orchestra; the giving of fine choral performances, and of organ recitals and a series of great choral and band contests. In pursuance of this plan the appropriation of \$450,000.00 made for music was approximately and finally applied as follows:

Bands	\$264,787.34
Orchestra (including famous conductors of the world)	129,780.03
Organists	15,140.00
Soloists.....	3925.00
Choral Contests	16,000.00
Conductor Symphony Concerts.....	6,000.00
Administration, part (balance supplied from receipts)	14,367.63
	\$450,000.00

In September 1903, Mr. Stewart was sent to Europe, where he made provisional contracts with the British Grenadier Guards band, the Garde Republicaine, the Berlin Philharmonic, and the Russian imperial Guards bands. He also made arrangements with the famous organist, Guilman, for a series of recitals to begin in August and extend over a period of six weeks, and for the services of two celebrated "popular" conductors to lead the performances of the Exposition orchestra, Josef Helmsberger, of Vienna, and Karl Komzak, of Baden-Baden. These provisional contracts were afterwards ratified by the Exposition Company although later Mr. Helmsberger was replaced by Richard Heuberger, of Vienna, on account of illness. Charles Galloway was engaged as official organist and Alfred Ernst as conductor of the symphony concerts in Festival Hall.

The first and among the most distinguished of the musical events given upon the exposition grounds were the great choral performances rendered in connection with the ceremonies attending upon the Dedication of the Exposition, April 30, 1903. On that occasion, a chorus of 2,800 singers, comprising the principal choral organizations of St. Louis, took part. A band of 100 performers accompanied the chorus. Alfred Ernst, of St. Louis, conducted.

Elaborate preparations were made for the opening of the Exposition. A chorus was made up of the members of the Choral Symphony Society, Morning Choral Club and Apollo Club. Two compositions, especially written for the Exposition, were rendered: "Hymn to the West" (poem by E. C. Stedman and music by J. K. Paine), sung by the chorus; and "Louisiana March," by F. Van der Stucken, played by Sousa's band. The "Star Spangled Banner" and "America" were also sung by the chorus. Alfred Ernst conducted the choral numbers. The chorus and band were placed in the Plaza of St. Louis on raised seats, to the right of the speakers.

The Exposition Orchestra:

The exposition orchestra under the direction of Alfred Ernst and Max Bendix began its engagement on the opening day of the Exposition. This orchestra, as perfected, was one of the most representative musical bodies ever assembled. It consisted of eighty-two members, carefully selected from principal musical organizations in the leading cities of the United States including besides St. Louis, Boston, Chicago, Philadelphia, Pittsburgh and Cincinnati. The nucleus was formed from the St. Louis Choral Symphony Society, fifty-two members of which were engaged.

As the experience at Chicago in 1893 had demonstrated that exposition audiences would not attend daily symphony concerts, it was planned to specialize the symphony concerts by confining them to certain emphasized dates and to use the orchestra five days in each week on popular programs. When the place for popular concerts was under discussion, it was decided that the audience would be more comfortable and enjoy the programs better if an arrangement could be made to have these popular programs given in the Tyrolean Alps, the principal restaurant concession. A contract was made with the Tyrolean Alps company, upon terms mutually agreeable, for the use of the orchestra each day, on such days as it was not employed by the Exposition Company for the symphony concerts.

The symphony concerts were inaugurated at Festival Hall on Friday afternoon, June 3rd. It was deemed advisable to wait until this date because of the necessity of the members of the orchestra obtaining the daily practice in the popular concerts at the Tyrolean Alps in order to bring it to a condition worthy of doing high-grade work. Twenty-five symphony concerts were given in Festival Hall by this orchestra during the Exposition. One concert each week was given, and the admission was twenty-five cents for each person. Mr. Ernst conducted twenty-two of the concerts. The remaining three were conducted by Emil Mollenhauer, Walter Damrosch and Frank Van der Stucken respectively. As a rule, one soloist (usually a vocalist) appeared at each concert.

In symphony concerts the greatest masters of orchestral compositions were represented on the programs: Haydn, Mozart, Beethoven, Schubert, Weber, Schumann, Mendelssohn, Berlioz, Wagner, Brahms, Liszt, Grieg, Tchaikowsky, Dvorak, Saint-Saens, Massenet, Moskowski, Elgar, Glazaunow, and others. It was also the plan to represent at nearly every symphony concert an orchestral work by an American composer, either a native or resident of the United States. The following American composers were represented: MacDowell, Foote, Parker, Chadwick, Van der Stucken, Klein, Farwell, Forster, Pommer, Converse, Kroeger, Ahl, Housely, Beck, Mole, Carter, Schulz, Baermann, Penfield, Goldbeck, Crane. Some of these received their first hearing in Festival Hall. It la believed that this was the first attempt to make a feature of the regular performance of works by American composers.

The popular concerts of the exposition orchestra proved very successful. These were conducted by Mr. Ernst and Mr. Bendix, alternately, until the arrival from Vienna of Richard Heuberger, who replaced Mr. Ernst. Karl Komzak arrived on August 14th and from that date, he, alternately with Mr. Bendix and Mr. Ernst, conducted the orchestra until the close of the Exposition. In October Mr. Komzak inaugurated his weekly "popular concerts" on Tuesday afternoons, which greatly contrasted with the symphony concerts in character and met with much favor.

Bands of the World:

The most celebrated bands in Europe and America including those already mentioned, were engaged to give concerts in the pavilions stationed on the grounds. These bands were to play daily, free to the public, excepting a small fee for reserved seats controlled by a concession company. The following is the list of bands engaged by the Exposition Company, with personnel of each and length of service.

	Men	Weeks
Sousa's Band	66	4
Innes' Band	50	4
Conterno's Band	50	3
Weber's Band	40	2
Fanciulli's Band	50	3
Boston Band	60	10
Phinney's Band	50	2
Kilties' Band	50	2
Banda Rossa	50	2
Ellery's Band	55	2
Haskell Indian Band	40	2
Well's Band (Utility Band)	40	31
Garde Republicaine Band	80	5
Grenadier Guards	60	6
Berlin Band	55	8

The prices paid for the services of the bands, for the orchestra and for all other musical items and features were notably high, although they were the best that could possibly be made. The minimum salary demanded by the schedule of the "Musician's Mutual Benefit Association" was \$46.00 per week, to be paid each musician in bands and orchestras for services of four hours each day, six days per week.

Handsome band pavilions were provided for open-air concerts at prominent points upon the exposition grounds; one on either side of the Plaza of St. Louis, one in the Machinery Gardens, one in Cascade Gardens, one on the Plaza d'Orleans and one at the approach to the Plateau of States. During cool and rainy weather the bands played indoors, in locations provided in exhibit palaces, in Festival Hall, and elsewhere.

Well's band gave daily concerts at different pavilions, during the entire exposition period. This band was called upon repeatedly to play at state and other functions and

at various places in the exposition grounds. The other American and foreign bands appeared in carefully arranged order and succession, the plan being to have from three to six of these celebrated concert bands rendering programs upon the grounds all of the time. Two concerts of two hours each, one in the afternoon and one in the evening, were rendered by each band except Well's, which gave three concerts dally, one in the morning, one in the afternoon, and one in the evening. On one occasion, the 23d of July, a "Massed Band Concert" was given in Festival Hall, those taking part being the Boston, Fanciulli's and Well's bands.

During August the Grenadier Guards band of London began its engagement of six weeks; and in early September, the Garde Republicaine entered upon its engagement of five weeks. These great bands amply fulfilled all that was expected of them and their concerts were a source of great delight to all who heard them. Their engagements terminated upon the same day, Saturday, October 8th. On that day, the President of the Exposition and mayors of Chicago and St. Louis and their staff took official notice of the presence and departure of the great bands in a public manner on the Plaza St. Louis. In October, the famous Berlin Philharmonische Blas Orchester (on the programs called "The Berlin Band"), led by the famous composer and conductor, Franz von Blon, appeared and played until the last week of the Exposition. On account of the nights becoming too cool for audiences to sit before the pavilions in order to listen to the music, this band played four nights each week in Festival Hall during the last part of its engagement.

In addition to the bands regularly engaged by the Exposition Company, there were a number of other important bands which rendered excellent programs upon the exposition grounds. The Mexican band, generously sent to the Exposition by the Mexican government, gave concerts constantly in the pavilions and in Festival Hall until its return to Mexico in the latter part of October. The Victoria band of Vancouver, B. C., was also kindly loaned to the Exposition by the Canadian government during a period. At the Government building several famous government bands gave dally concerts, with no expense to the Exposition Company. Among these was the celebrated Marine band. The Indian School band also gave concerts dally and played at many points upon the exposition grounds. These, in addition to the two splendid Philippine bands (the great Constabulary band, pronounced to be one of the finest in the world, and the Philippine Scouts band), which were upon the exposition grounds during the entire season, and the great number of state, regimental and other bands coming and going with troops, militia and delegations, gave to the Exposition altogether a musical complement of from eight to twelve bands which rendered music dally upon the grounds.

Grand Organ Recitals:

Arrangements were made by the Exposition Company for the installation of a grand organ in Festival Hall. This organ was to be considered as an exhibit in the department of Liberal Arts. It was to be the largest organ in the world, and of the most modern type, containing many new features introduced by its inventor, W. B. Fleming. It was to be operated by electric power. Owing to several conflicting circumstances it was not until June 9th that the first organ recital was given on this mammoth organ by Charles Galloway, the official organist. After that date, dally organ recitals were given until the close of the Exposition by representative organists from all parts of the country and the world who were paid a stated sum for each recital. The most important engagement was that of Alexander Guilmant, of Paris, who was employed to give thirty-six recitals, covering an interval of six weeks. His engagement was so successful that he gave three extra recitals during his last week. M. Guilmant also gave a "French Historical Music" recital on Sunday afternoon, October 2nd. The attendance at the organ recitals proved their

popularity, sometimes taxing the capacity of Festival Hall. An admission fee of ten cents for each person was charged at these recitals until the Guilmant engagement, when the price was raised to twenty-five cents. This rate continued throughout the remainder of the Exposition.

On June 29th the first choral performance was given in Festival Hall by the Kanas City, Mo., Philharmonic Society and the Treble Cleff Club of Leavenworth, Kanas, which united in producing Carl Busch's cantata, "King Olaf." This performance was notable as being a rendition of a high-class work by a resident American composer who conducted it on this occasion.

On the 9th of July the exposition chorus (consisting of members of the St. Louis Choral Symphon⁷, Morning Choral and Apollo Clubs), rendered Handel's great oratorio, "The Messiah," under the direction of Alfred Ernst. Haydn's "Creation" was given on July 11th, by the Dubuque Choral Society under the direction of W. I. Pontius; Elgar's cantata, "Caractacus," was given on July 13th by the United Evanston and Ravenswood Choral Societies under the direction of P. C. Lutkin; and Mendelssohn's oratorio, "Elijah," was given July 16th by the Scranton Oratorio Society under the direction of J. T. Watkins. Miscellaneous choral concerts were given on July 12th and July 14th by the Colorado Oratorio Society and the Denver Choral Society respectively. On August 9th, Gounod's cantata, "Gallia," and Paine's "Hymn of the West" were given under the direction of Alfred Ernst. Other choral performances were given in Festival Hall by different choral clubs.

The exposition program of music included, in addition to and in conjunction with the choral performances, a series of extraordinary choral contests. The amount of prizes offered to the winners of these notable performances was \$16,000.00. The total number of entries in the contests were nine, there being five in the first grade (consisting of choruses containing from 90 to 200 members), and four in the second grade (consisting of choruses containing from 40 to 70 members). In the first grade, the following societies contested: The Dubuque Choral Society, W. H. Pontius, conductor; The Scranton Oratorio Society, J. T. Watkins, conductor; The Denver Choral Society, Gwilyn Thomas, conductor; The Belleville Choral Society, Ludwig Carl, conductor; The Evanston Choral Society, F. C. Lutkin, conductor. In the second the following societies contested: The Colorado Oratorio Society, Claude Rossignol, conductor; The Pittsburg Cathedral Choir, Joseph Otten, conductor; The Denver Select Choir, Henry Houseley, conductor; The Ravenswood Choral Society, F. C. Lutkin, conductor. The judges of the contest were: Wm. H. Pommer of St. Louis, chairman; Charles E. Allen of Chicago; William Apmadoc of Chicago; Edward Broome of Montreal, Canada; John Towers of St. Louis. The awards were as follows: First Grade-First prize, Scranton Oratorio Society, \$6,000; second prize, Evanston Choral Society, \$3,500; third prize, Denver Choral Society, \$2,500. Second Grade-First prize, Denver Select Choir, \$2,500; second prize, Pittsburg Cathedral Choir, \$1,500; third prize, Ravenswood Choral Society, \$1,000. The excellent work done by the various choruses was convincing indication that the results achieved were worthy of the effort and outlay made.

Pianoforte recitals were given in Recital Hall during July by Senor Pedro L. Ogazon of Mexico and Senorita Laura Rayneri of Cuba. Others were subsequently given by Miss Mary Hollock of Philadelphia. The expenses of these recitals were borne by different pianoforte firms. The gross receipts went to the Exposition.

A point to which reference may be made was the educational value of the programs. All organ recitals and symphony concert programs were annotated. With each composition was printed an explanation concerning its character or the rank of the composer. As many favorable comments concerning this feature reached the ears of the officers of the bureau of music during the Exposition it is believed that much good was done by these annotations.

CHAPTER IV

THE SCULPTURE

Historic and Decorative—The Order and Coherence—Karl Bitter's Scheme—Apotheosis of Saint Louis—Louisiana Purchase Monument—Portrait Statues—The Contributing Sculptors—More Than One Thousand Figures and Groups.

AS one universal exposition follows another the succeeding one tries to surpass its predecessor in attractiveness. It is most gratifying to observe that this attractiveness is sought for and is being accomplished by the application of artistic principles such as monumental plan and lay-out and water effects of unprecedented grandeur. In the expositions held within the boundaries of the United States, monumental and architectural sculpture has held a dominant place beginning with the Columbian Exposition in 1893. The success and popularity which this feature achieved in that instance led to still greater efforts in later events.

The sculpture for the Louisiana Purchase Exposition was planned on a magnificent scale. The palaces were larger, the vistas grander, and the courts and avenues more extensive and imposing than those of any exposition previously held. The architectural scheme was the grand and monumental. The predominance of the classic style in the exposition palaces and their heroic proportions made suitable the use of sculptural decorations of a character in unison with this general scheme.

In providing for appropriate statuary for the Louisiana Purchase Exposition, the chief of sculpture, Karl T. F. Bitter, considered carefully the general plan, the designs for the buildings, the historic importance, and the aims and objects of the Exposition. The scheme finally adopted gave attention to the various factors mentioned and included subjects of historic significance more than has heretofore been the case. At the same time, ample provision was made for statuary of an allegorical nature expressive of purely joyous and festive ideas such as naturally associate themselves with an exposition designed to celebrate an event so fraught with rejoicing as the extension of the sway of liberty from the Atlantic Ocean to the Pacific.

The exposition palaces themselves were appropriately adorned with sculpture symbolizing their purpose and meaning, and also enhancing their architectural effects. In addition to this the courts and avenues contained groups and figures having a direct relation to the general architectural and sculptural scene, while in the center of the whole exposition picture were Festival Hall and the Cascades embellished with elaborate grouping of sculptural effects and having for their background the Colonnade of States and the Art Palace, the latter also representing the use of sculptural decorations on a magnificent scale, doubtless more magnificent than was ever before attempted.

The historic figures and groups were to be found chiefly in the avenues leading to this central portion of the exposition grounds, while the Colonnade of States at the rear of the Cascades afforded an opportunity to commemorate in an allegorical manner the commonwealths now composing the territory included in the original Louisiana Purchase. The Exposition found its culminating note of jubilation in the Cascades, which undoubtedly proved to many visitors a great distinctive feature of the Exposition - one sure to make it memorable.

A Central Theme of Sculpture:

The Festival Hall and Cascades were treated as a unit and their decoration was designed both to create a picture of surpassing beauty and to express in the most noble form which human mind and skill could devise, the joy of the American people at the triumphant progress of the principles of liberty westward across the continent of America. The central fountain of the Cascades was known as the Fountain of Liberty, the sculpture of which illustrated such characteristics of the American people as liberty, justice, truth and patriotism. The side cascades referred to the Atlantic and Pacific oceans joined by the Louisiana Purchase, and the poetic ideas associated with these waters and the various forms of life abounding in and upon them. The statuary for the Colonnade of States was also possessed of much originality and beauty.

The first sight to attract attention after entrance by the main gate of the exposition grounds was the vast open area called the Plaza St. Louis, where the first object to excite definite interest was the noble sculptural composition entitled the "Apotheosis of St. Louis." This was intended to express the welcome which the city of St. Louis extended to her guests, and to commemorate the character in history for whom the World's Fair city was named, Louis IX. of France, known as "Saint Louis," in its detail it showed a massive architectural base at the foot of which was seated among proper accessories a heroic figure representing the city of St. Louis welcoming her guests. Above, on a horse, clad in the armor of the thirteenth century, was seated Louis IX, whose name the city bears.

On each side of the grand court were two other equestrian statues of colossal proportions, one of Louis Joliet, who explored the Mississippi region, and the other of DeSoto, who was the first civilized man to behold the mighty Mississippi River. These figures represented the two nations which entered first upon the exploitation of the region of the Louisiana Purchase.

At the southern end of the grand court stood the Louisiana Purchase Monument, consisting of a shaft one hundred feet in height, surmounted by a figure of Peace alighting upon a globe supported by four robust figures, representing respectively, the East, the West, the North and the South. At the base of this shaft were grouped compositions relating to the historic episodes of the Purchase. Forming part of the monument and facing north, was a rostrum from which speakers addressed the great assemblages on festive and ceremonial occasions. Adorning the arc at the head of the Grand Basin were four groups, the subjects of which referred to the period of the earliest settlements of the land comprising the Purchase. There were depicted the Indian sage advising the youth of his tribe to embrace the civilization of the white man, Indians in their sacred dances, an early pioneer seeking shelter from the elements, and a cowboy resting under the shadow of his faithful horse. These types were characteristic of the West in its various stages of gradual development.

To the right and left of the Purchase Monument extended the main transverse avenue on which principal entrances of the exposition palaces were located. In front of these entrances were erected appropriate statues of men whose careers had particular bearing upon the purposes to which the adjacent palaces were devoted. There were also in this avenue sculptural groups referring to the fascinating legends and folklore of the Indian. At the southern end of the east and west courts of the Exposition were erected equestrian statues of a Sioux chief and a Cherokee chief, respectively, representing the two principal tribes with which the white man had to contend for possession of the lands in the Purchase. These courts in their continuation formed the approaches to the Cascades and consisted of broad stairways flanked by portrait statues of such men as figured prominently in the actual civilization of the region, its development and purchase. On one side were James Madison, James Monroe, Marbois, Anthony Wayne, Robert Livingston, Bienville, Andrew Jackson.

Explorers of Louisiana Territory:

Along the wide pathway leading upward from the palace of Mines and Metallurgy to the Colonnade of States were the statues of the explorers of Louisiana Territory. These were the effigies of the white men who traversed the vast region and first made known its resources and possibilities. The figures were more than life-size. In each case the sculptor presented his subject with historic accuracy and in a characteristic pose. William Clark and Meriwether Lewis, who shared the peril and the honor of the expedition up the Missouri and down the Columbia, were in the costume of explorers. William Clark held his long rifle and was in an attitude of climbing the boulders of the summit of the Rocky Mountains. Phillipe Francois Renault stood with one foot upon a rock rising in front of him holding a nugget of precious mineral and trying, apparently, to locate its source in nearby ledges. Daniel Boone was leaning forward with rifle lifted as if ready to take instant aim at a wild animal, the hunter's long hair falling from beneath his coonskin cap. Marquette was clad in robes of the church, holding aloft the crucifix, his gaze upwards as if appealing to the Great Spirit in behalf of a congregation of wondering Indians. Pierre Laclede, the founder of St. Louis, stood as if taking possession of the site, with prophetic gaze.

He was delighted to see the situation; he did not hesitate a moment to form here the establishment that he proposed. Besides the beauty of the site, he found here all the advantages that one could desire to found a settlement which might become considerable hereafter, which might become one of the finest cities of America. - from Auguste Chouteau's narrative of the settlement of St. Louis.

The exploring era of the Louisiana Territory proved to be rich in strong subjects for the sculptor. The pathfinders of the Purchase were sturdy characters. Their statues stood on the Terrace of States like sentinels of progress in the pioneering period.

Encircling the upper sources of the Cascades and forming a screen closing in the view south of the exposition grounds, was the Colonnade of States, in the arches of which were seated upon pedestals figures representing the fourteen states and territories that originated from the Purchase - Louisiana, Missouri, Arkansas, Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota,

Colorado, Montana, Wyoming, Oklahoma and Indian Territory. In the center of this colonnade arose Festival Hall showing Apollo and the Muses and several groups of minor decoration.

At the east entrance to "The Pike" was located Remington's famous group of Four Cowboys Off the Trail - an appropriate symbol of greeting.

Aside from the palace of Art, most of the art embellishments of which were of marble and bronze, there were no other abiding sculptural decorations. Staff figures ornamented the other exhibit palaces. The subjects were selected for their appropriateness to the building which they adorned.

Of equal importance, and perhaps more difficult than the artistic part of the undertaking, was the technical execution of the ideas that were given form by the various sculptors. The artists were required to make scale models of certain proportions which were carried out to full size by enlarging machines especially adapted for that purpose. The main workshop was located in the neighborhood of New York City, on a principal railroad line. It was of generous dimensions, and provided with every facility for speedily, carefully and economically carrying out the important work in hand. Many of the sculptors who were entrusted with commissions for original work assisted in that workshop, and though the work there was chiefly of a mechanical nature, the unusual proportions and character of it furnished a strong impetus for the younger members of the profession to profit by the experience.

Development of the Plan:

The consecutive order and coherence of the subjects of the sculpture, as well as the superior execution, formed one feature of the Exposition which distinguished it from all preceding expositions. In his concise and graphic report Karl Bitter, chief of the department of sculpture, explains the development of his scheme which resulted most satisfactorily.

My first step in performing my duties was to visit the World's Fair grounds, familiarize myself with the general plan of the various buildings and the object of the Exposition, and on the basis of my studies and impressions I reported to the director of works on December 27th, outlining in general terms the various sculptural features which I proposed and the manner in which I expected to produce them. In general terms I expressed my belief that a sum of about \$500,000.00 would be needed to execute what I proposed. Having received official approval of my preliminary plans, I returned to New York in order to prepare a carefully composed scheme and a more accurate estimate of cost.

As rapidly as possible I developed a more detailed report dividing the important work of producing the original models into numerous contracts and suggesting artists to whom the contracts should be given. This report was submitted to the director of works under date of January 23, 1903, and upon approval I immediately awarded the contracts for the original models.

The amount expended for these models was \$191,650.00. These contracts were distributed in such a manner that all notable sculptors in various cities of the Union were thus engaged and interested in the work for the Exposition. I regularly inspected the work in progress in the various studios, and as soon as a sufficient number of original scale models were completed, I established a workshop at Weehawken, New Jersey.

As the models were completed and approved by me and delivered at this workshop, the forces engaged were increased until we finally had over one hundred artists and artisans employed. The methods pursued at our shop were most economical and the results obtained most satisfactory from an artistic point of view. This method of commissioning the artist with the designing of a scale model only and doing the technically difficult work of enlarging this scale is a department shop under my supervision was first introduced by me on the occasion of the erection of the Dewey Arch in New York City; again, employed in connection with my office of director of sculpture, Pan-American Exposition, and more perfected in many directions in the present case. This system alone made it possible to execute so large a number of objects in so short a time and so economic a manner. From this shop I shipped fifty-four carloads of completed and enlarged originals to the exposition grounds.

I have endeavored to employ the art of sculpture in order not merely to gain decorative effects but to stimulate the imagination and teach certain lessons by a proper and intelligent selection of subjects. Of course, I followed this principle as far as possible also in the case of the Louisiana Purchase Exposition. It gives me great pleasure to state that my ideas were readily and intelligently interpreted by the various artists employed, and that the transactions with all the numerous sculptors were concluded without any friction whatsoever. The work which they produced has been given by me the greatest publicity and has been commented upon in a manner most favorable to the future of American art.

It having become my duty to lay out and superintend whatever appeared needful for this Exposition in the line of sculpture, I familiarized myself with the general plan, the designs for the buildings, the historic importance and the aims and objects of the Exposition, and upon this basis proposed the scheme which included subjects of historic significance perhaps more so than has ever before been the case.

At the main gate of the Exposition was a heroic equestrian statue of Saint Louis. It does not need many words to explain its presence. Going back as far as we can for the traces which history and legend have left in connection with our city as mother of the enterprise, we come across this King of France, whose name the city bears. Following this, and in front of the Manufactures building, I located a portrait statue of Louis Joliet, and to balance it in front of the gate to the Varied industries building a statue of De Soto, also equestrian in form. These two statues were selected as representatives of the two nations which first appear connected with the history of the region of which the Louisiana Purchase forms a part.

Following these lines, there were two more equestrian statues as representatives of the people from whom this region was taken, the Indians as first possessors of the soil. They were located at the base of the hill crowned by the Festival Hall. The one represented a Cherokee Chief, the other a Sioux Chief.

Continuing the story of the Indians' disappearance, an heroic group was placed at the eastern side of the Sunken Garden, forming the terminus of the main traverse avenue. This group, as its title indicated, *The Destiny of the Red Man*, spoke of his pathetic end.

On the road leading from the statues just mentioned up the hill were portrait statues beginning with Panfilo Narvaez, the Spaniard and first European who had any legitimate authority over any part of the American territory. Next was the statue of Pere Marquette, known to us as a Jesuit missionary and the spiritual guide of the expedition that for the first time explored the great lakes. Then followed Phillipe Renault, Pierre Laclede, Sieur La Salle, Daniel Boone, William Clark, Meriwether Lewis and George Rogers Clark.

The road on the other side showed the statesmen and soldiers, James Madison, James Monroe, Marbois, Robert Livingston, Andrew Jackson, Anthony Wayne and Bienville, the founder of New Orleans. In specially prominent locations at the foot of the

Terrace of States were the statues of Thomas Jefferson and Napoleon.

As a great deal of interest seemed to be manifested in the Lewis and Clark Expedition, a special statue was erected for Sacajawea, the Indian woman who rendered such splendid service to that expedition.

The subject of the Louisiana Purchase itself found ample expression in the Louisiana Purchase Monument, located upon the most prominent position in the Exposition at the foot of the Main Basin. Its principal sculptural feature represented the Signing of the Purchase Treaty.

To conclude the list of portrait statues, I mention the monuments which were erected at several main entrances to exposition buildings. There was a portrait statue of Pestalozzi in connection with the Education building, and a further one of Horace Mann. The Electricity building had Joseph Henry and Benjamin Franklin. The Manufactures building had Charles Goodyear and the Varied industries building had John Gobelins.

After ending my reference to history and local color, I introduced allegory and used it especially in connection with those features of the Exposition that were of a decorative nature, as the Festival Hall and the Colonnade of States. In this colonnade the fourteen states of the Louisiana Purchase were represented by figures of heroic size, larger than any others on the grounds, and perhaps larger than any number of statues that were ever done for such a purpose.

A great deal of sculpture of a decorative nature being required for the Cascades, I selected my subjects in a manner to give the sculptor the greatest freedom in its treatment. For the central cascade I selected a title, The Fountain of Liberty. For the side cascades, the Atlantic and the Pacific oceans respectively, the intent being to indicate that the principles of Liberty were extended by the Purchase from ocean to ocean. Numerous other features were incorporated within this frame to complete the picture.

Altogether, more than a thousand figures and groups were erected and placed on the grounds and buildings.

In conclusion, it may be said without fear of contradiction, that the consensus of opinion of the leading artists and connoisseurs of the world who saw and carefully examined this tremendous display of sculpture afforded by the Louisiana Purchase Exposition, was that as a whole the work would not only prove a credit to the profession of sculpture, but that it had given immeasurable encouragement as to the future of this art in America.

A Roll of Honor:

Reference to the sculpture of the Exposition would not be complete without a roll of honor of those who contributed, together with the subjects to which their art was applied.

<i>Sculptor</i>	<i>Sculpture</i>
L. O. Lawrie	Two Horsegroups
George T. Brewster	Spandrels, Manufactures Building
Michel Tonetti	"Victory"
Isidore Kontl	"Progress of Manufacture"
L. Amateis	Models for Manufactures Building
H. A. McNeil	Frieze, Fine Arts Building
Daniel C. French	"Sculpture," Fine Arts Building
Louis St. Gaudens	"Painting," Fine Arts Building
Charles Grafty	"Truth," Fine Arts Building
Philip Martiny	"Nature," Fine Arts Building
Andrew O'Connor	"Inspiration," Fine Arts Building
Albert Jaegers	"Egyptian Art," Fine Arts Building

<i>Sculptor</i>	<i>Sculpture</i>
Carl E. Tefft	"Renaissance Art," Fine Arts Building
John Gelert	"Gothic Art," Fine Arts Building
Henry Linder	"Oriental Art," Fine Arts Building
F. Edwin Elwell	"Classic Art," Fine Arts Building
C. F. Hamann	"Modern Art," Fine Arts Building
Ottolio Piccirilli	Eleven Medallions, Fine Arts Building
George T. Brewster	Eleven Medallions, Fine Arts Building
Phillip Martiny	Fountains, Manufactures Building
H. A. McNeil	Main Cascades
Isidore Konti	Side Cascades
Karl T. F. Bitter	Louisiana Purchase Monument
A. Phimister Proctor	"Griffin"
Charles H. Niehaus	Apotheosis of St. Louis
Enid Yandell	"Victory"
S. H. Borglum	Groups for Grand Basin
F. G. R. Roth	Groups for Grand Basin
E. C. Potter	Groups for Grand Basin
A. Ruel	Group at Colonnade
Vincenzo Alfano	Group at Colonnade
Rudolph Schwarz	"Louisiana" for Colonnade
S. Calder	"Missouri" for Colonnade
A. Jaegers	"Arkansas" for Colonnade
C. E. Tefft	"Iowa" for Colonnade
A. A. Weinman	"Kansas" for Colonnade
G. Gerlach	"Minnesota" for Colonnade
F. H. Packer	"Nebraska" for Colonnade
B. L. Zimm	"North Dakota" for Colonnade
L. O. Lawrie	"South Dakota" for Colonnade
A. Zeller	"Colorado" for Colonnade
A. C. Skodik	"Montana" for Colonnade
C. F. Hamann	"Wyoming" for Colonnade
J. S. Conway	"Oklahoma" for Colonnade
C. A. Heber	"Indian Territory" for Colonnade
F. G. R. Roth	"Bear" for Colonnade
H. K. Bush-Brown	"Horace Mann"
A. Jaegers	"Johann H. Pestalozzi"
J. Flanagan	"Joseph Henry"
J. J. Boyle	"Benjamin Franklin"
M. Tonetti	"Charles Goodyear"
M. Mauch	"John Gobelins"
C. Lopez	"Bienville"
C. Lopez	"Meriwether Lewis"
E. Yandell	"Daniel Boone"
Elsie Ward	"George Rogers Clark"
F. W. Ruckstuhl	"William Clark"
L. A. Gudebrod	"Sieur La Salle"
C. E. Dallin	"Pere Marquette"
Charles Grafty	"Thomas Jefferson"
D. C. French	"Napoleon."
H. Adams	"Panfilo Narvaez."
J. Scudder	"James Madison."
A. Lukeman	"Robert Livingston."
Julia M. Bracken	"James Monroe."
Henry Herring	"Marbois."
Louis Potter	"Andrew Jackson."

<i>Sculptor</i>	<i>Sculpture</i>
S. Calder	"Phillipe F. Renault."
W. Clark-Noble	"Anthony Wayne."
J. B. Hartley	"Pierre Laclede."
L. Taft	Fountain Groups.
A. A. Weinman	"The Destiny of the Redman."
F. W. Ruckstuhl	"Lion."
F. W. Ruckstuhl	Models, Mines and Metallurgy Building.
A. C. Skodik	Models, Varied industries Building.
F. Miranda	Tympanum for Machinery Building.
Philip Martiny	Figures, Liberal Arta Building.
R. H. Perry	"Atlas and Globe."
T. Baur	Frieze, Mines and Metallurgy Building.
H. Linder	Group for Liberal Arta Building.
R. P. Bringhurst	Models for Education Building.
A. A. Weinman	"Shield holders."
C. J. Mulligan	Figures, Mines and Metallurgy Building.
C. A. Lopez	"Quadriga."
G. E. Bissell	Groups for Liberal Arta Building.
H. P. Pederson	Figures for Liberal Arts Building.
C. Y. Harvey	Model for Liberal Arts Building.
E. B. Stevens	Reclining Figures on Pediment, Liberal Arts.
M. Mauch	Group, Machinery Building.
M. B. Wilson	Spandrels, Machinery Building.
A. Schaaf	Spandrels, Machinery Building.
F. H. Frolich	"Torchbearer."
F. W. Ruckstuhl	Groups, Varied industries Building.
P. Rossak	Spandrels, Varied industries Building.
C. J. Barnhorn	Tympanum, Varied industries Building.
D. Tilden	Tympanum, Varied industries Building.
J. Flanagan	Groups, Varied industries Building.
Wm. W. Manatt	Spandrels, Varied industries Building.
B. L. Zimm	"Torchbearer."
E. B. Longman	"Victory."
B. L. Pratt	Group, Electricity Building.
C. Grafly	Groups, Electricity Building.
A. Lukeman	Models for Electricity Building.
G. J. Zolnay	Model for Transportation Building.
F. H. Packer	Model for Transportation Building.
F. F. Horter	Model for Transportation Building.
Wm. Sievers	Model for Transportation Building.
P. Wiehle	"Cartouche" for Transportation Building.
C. E. Dallin	"Sioux Chief"
J. E. Frazer	"Cherokee Chief."
E. C. Potter	"DeSoto."
A. P. Proctor	"Louie Joliet."
E. Harvey	Animal Group, Agriculture Building.
P. Martiny	"Apollo and the Muses."
A. Lukeman	"Music."
M. Tonetti	"Dance."
Charles J. Pike	"Cartouche" for Festival Hall.
George T. Brewster	Spandrels, Manufactures Building.
Bruno L. Zimm	"Sacajawea."

CHAPTER V

THE LANDSCAPE DESIGNS

**Ten Millions of Flowers—Saving the Trees—Cascade Tapestry
Sunken Garden—Plantations about the Buildings—Grounds of
the Grand Trianon—World's Fair Color Scheme—The Gardens and
the Builder—Kessler's General Design.**

TEN millions of flowers! The figures were bewildering. Their full meaning was not comprehended without sight. To appreciate the adornment of the landscape the visitor must traverse the Cascade Gardens, the Plateau of States, the Sunken Garden, the Place of Nations, Machinery Gardens, the parterres on the slopes around the palace of Horticulture. These were centers of floral plans and effects. They were not all. The flower beds of the Cascade Gardens were thousands of feet in length. But they comprised only parts of the landscape gardening. In various localities, away from the centers mentioned, the visitor came unexpectedly upon the color scheme in nature, sometimes in vast beds, not infrequently in nooks and corners. The landscape gardener selected such plants as would be longest in bloom. The geranium and the scarlet sage were given place in almost every bed. They insured continuing glory. In some places the fragrance of the geranium was all pervading. Perennials and color plants were depended on to maintain the variety of lines. Possibly the floral work reached the highest degree of success in the Cascade Gardens. It was there that the deep green lawn and glistening statuary were toned and enriched with the masses of color in the flower beds, the whole comprising scenes most pleasing to the vision.

From the east lagoon to the foot of Government Terrace lay one of the most admired of the landscape achievements. It was the Sunken Garden. An artificial lake was located there before the World's Fair builders began. A part of it was utilized for the garden. From the walkways along the exhibit palaces on either side the grassy terraces dropped down several feet just as they did for the lagoons. But instead of a surface of water between the terraces was an expanse of lawn and flower beds. The garden was in width one-half of the 300 feet between the palaces. It was 750 feet in length. To pass from palace to palace, the visitor must go down several steps, traverse a path through the garden and then climb as many steps. The garden was seen in its perfection from above. This being the condition, the landscape artist pursued what he considered a carpet or tapestry method to produce the desired impression. There was statuary in the garden. Midway was a pond for aquatic plants. With the flowers in full bloom the Sunken Garden presented a picture of extraordinary beauty.

The tinting of the staff painter was but part of the World's Fair color scheme. Along the walls of the exhibit palaces, in countless angles of architecture, around the statuary, the landscape artist added from Nature's most enduring and con-

trasting colors. The gardener trod closely upon the heels of the builder. A notable feature of the Terrace of States and of the terraces of the Grand Basin was the use of century plants. At one time four carloads of these plants were utilized on the terraces. There were planted in places most effective 60,000 shrubs, 9,000 trees of deciduous character, 5,000 vines and 1,300 evergreens. Much of this plantation greenery was in clumps and fringes about the old ivory-tinted architecture. It veiled the fountains, hiding defects and rising to heights of ten to twenty feet. Three years before the opening of the Exposition this work of the landscape gardener was undertaken. It was carried on as the seasons permitted until the opening day of the Exposition. It was a feature which contributed in no small degree to the finished impression of grandeur and loveliness. Forest Park was truly named. The site of the World's Fair abounded in growing vegetation. But Forest Park, as Forest Park, did not approach the luxuriance and perfection of growing vegetation that the World's Fair period witnessed.

The Landscape Design:

How George E. Kessler, chief landscape architect, worked out his admirable plan is told by himself in his report.

The general design of the Exposition, the landscape as a whole, was predetermined by the fortunate selection of Forest Park as its site. The topography led naturally to the use of the lower plain on the north as the site of a comparatively compact city of exposition palaces this together by great formal avenues and crowned on the contiguous hills by the beautiful structures overlooking the lower levels, the slopes between being so shaped as to give the opportunity for the Cascades and their surrounding gardens.

The disposition of the villa-like state buildings on the higher levels of the forest area to the south gave to each building a fine setting, the forest serving as a splendid background for the whole and the entire picture suggesting the possibility at least of a beautiful city in reality.

An entire formal treatment of the level area, or "main picture," containing the exhibit palaces, necessarily resulted in the arrangement of these buildings on rigid avenue lines, which were in turn subdivided into paved roads, broad lawns and water surfaces. Opportunity was thus given for planting the large maples that lined the principal roads in the main part of the grounds and which aside from furnishing welcome shade served to frame the buildings and show them in pleasing relief against the green foliage.

Between the absolutely formal design of the main picture and the state buildings lay the pleasure grounds of the Exposition - the area of the Cascade Gardens partly formal and partly natural in the execution of the plantations and the formation of the ground. Opportunity was here given for the glorious display of colors and forms of plant life available for garden uses, and for bringing about complete harmony between the even, broad lines of greensward and the sharper architectural lines of the Cascades and the Colonnade.

Provision was made for a landscape department by the appointment of the writer as consulting landscape architect to the Commission of Architects, to which was entrusted the problem of the first general design. No actual departmental organization, however, was effected and no construction work begun until the following winter. Then while the heavy grading was being done by the department of civil engineering the first tree-planting took place. The trees were silver maples ranging from ten to sixteen inches in diameter through the trunk, and were moved from other portions of the grounds to line the avenues between the exhibit buildings. There were over 200 in number, and all

were transplanted with balls of earth about ten feet in diameter and hauled into place, traction engines often being used for motive power. As a result of the rough condition of the ground at that time some of the trees were placed where the surrounding ground was five or six feet above the final grade surface, at other points as much below. Under the many difficult conditions, it is entirely due to the unremitting care of the superintendent of the department that all but six were growing vigorously at the close of the Exposition. Some 400 other smaller trees were transplanted in the same manner with practically no losses.

Except for the foregoing work little was done by the department toward embellishing the grounds until the exhibit buildings were completed and the rough grading had been finished. Immediately before the dedication period one year before the opening of the Exposition, the department was fairly organized for its final work. This included the detail-designing in the office and the general field work. To facilitate handling the latter, it was divided into the following sections: (1) grading and ground surfacing; (2) general care of lawns and trees; (3) gardening. The last item was further subdivided into nursery and greenhouse departments, and here the many thousands of plants used for decorating the ground were raised. In the spring of 1903, a large nursery was established on the Fair site in an out-of-the-way corner, and the larger part of the trees and shrubs were there prepared for planting. Inasmuch as no portion of the grounds was ready, none of the shrubbery and small tree plantations was carried out until autumn, 1903, the material thus having only the season of the Exposition period in which to make the desired growth and show. It was a fortunate condition that brought about the acquisition of the greenhouses in which the bedding plants and the hardy herbaceous stock, used for filling out the shrubbery borders, were raised. Such large quantities of flowering and foliage plants could hardly have been handled otherwise, and without almost unlimited numbers at command only a fraction of the color showing could have been made.

To the manner of handling the maintenance work was due the satisfactory appearance of the grounds during the exposition period; for while trees, shrubs and plants may be properly grouped and well placed yet without constant and careful attention none will reach a satisfactory growth and appearance. During the early part of the season there was an almost constant rainfall; not an unfavorable condition but one which forced unusual attention to drainage and to precautions for letting air into the soil to prevent the earth from becoming sour, a condition more injurious to plant growth than almost entire absence of water. This condition was particularly emphasized in the case of some of the large transplanted maples where, with the original ball of earth absolutely dry, the surrounding loose earth, unless carefully watered, became sour, causing the roots to decay. Unless dried or replaced and the earth kept moderately moist, an entire failure of all the large trees would have resulted.

During the dry season careful watering was done, and owing to the warm, dry climate this work was carried on almost entirely during the night. The plants responded to the care given to them and the result was an almost unprecedented show of color.

Plants Used:

1. Large trees on avenues.....	237	
Small trees on avenues.....	283	520
2. Plantations: Trees, shrubs, herbaceous plants, annuals and bedding plants, grasses and vines.....		1,679,087
3. Specimen trees on lawns.....		202
4. Ornamental and decorative plants in gardens		10,690
5. Annuals and bedding plants in gardens.....		906,454
6. Hedge plants.....		16,901
7. Vines.....		13,388
8. Grasses.....		1,432
Total.....		2,628,674

The landscape work about the national pavilion of France was laid out by the chief gardener of Paris. It represented a typical French garden of the period to which the Grand Trianon, which was the building reproduced, belonged. A grotto was constructed to represent the outcropping of a ledge of limestone. Blocks of stone protruded from the soil. Water trickled over them. Bridges led from a little island to the mainland. Sculpture was distributed about the garden illustrating not only variety in subjects but in composition. A "Lion" seated on its haunches was presented in pink marble. "The Minuet" was done in bronze. "The Girl with Flowers" was of white marble. "Poetry" was idealized in brown stone. The paths, which were many, were of golden gravel. An orchard of espalier trees occupied one side of the garden and was a fascinating novelty to the American visitor. These trees presented horticultural fashions which have but little following in this part of the world. Espalier fruit trees are trained to assume strange forms. By means of framework and patient years of training, they are forced to grow in the forms of a pyramid, the spindle, the vase, and others. Some of the espalier trees in the garden of France represented ten years' training with frame and knife. Labels quaintly told what the purpose of the gardener was. For example, one of these designations was "A five-story apricot tree." With sunken logs the gardener produced a variety of levels in the surface of the garden. Many varieties of roses and evergreens and other shrubbery were brought from France and flourished during the exposition period.

CHAPTER VI

POINTS OF VIEW

Charm of the Radiating Plazas—The Central Scene—Grand Basin Festival Hall—The Colonnade of States—Operation of The Cascades—The Illumination—How Night Color Effects were Produced—Nomenclature in the Main Picture.

THE plan of radiating avenues or plazas gave three separate and different visions of the Cascades and Colonnade of States. When the visitor had passed through the entrance and had reached the edge of the Plaza of St. Louis, only a minute's walk, he saw before him three-quarters of a mile away the great dome of Festival Hall and the larger cascade issuing from its base. If he turned to the left and walked down the Model Street to the Plaza of Orleans, he had another view of the Colonnade with the East Pavilion and East Cascade doing duty for closure. If attracted by the noises and glamor of the Pike the visitor turned to the right and reached the Plaza of Saint Anthony, the third grand vision of the Colonnade terminating in the West Pavilion was before him. On nearer approach, through one of the three Plazas, the glories of the Colonnade and of the Cascades expanded and grew more impressive. The scenes of beauty were not exhausted from a single viewpoint. They could only be comprehended and appreciated as one moved forward or from side to side. This might be said to apply generally to the architecture of the Universal Exposition.

The great transverse avenue, Louisiana Way, three hundred feet wide, closed on the east by the Government building and on the west by the gardens of France and the Grand Trianon, did not reveal its grandeur from either end or from any single point between. Louisiana Way was not a straight-away course. It bent and conformed to the radiating scheme of the plazas or avenues crossing it. As the visitor proceeded along this transverse avenue of more than a mile only a part of its length was disclosed. With the advance new beauties were revealed in the varying architecture. The facade of one building might show half its length to be different from the other half.

The Main Picture:

The physical feature which offered opportunity for comparison with other expositions was the Grand Basin with its surroundings. Here was the chief triumphal architecture and landscaping of the Universal Exposition of 1904. And yet it was something entirely different from the central and distinguishing features of other expositions. The Grand Basin lay between terraces of lawns, rows of forest trees and the facades of the palaces of Education and Electricity. From front to front of these palaces across the basin was a distance of six hundred feet.

The approach to the Grand Basin from the north and from the main entrance was across a plaza seven hundred and fifty feet long, flanked with equestrian statues of De Soto and Joliet; at the head of the Grand Basin towered the column of the Louisiana Purchase Monument, one hundred feet and more. Around the edge of the basin were groups of statuary; from the further end rose geysers sixty feet in the air driven by unseen but tremendous energy. There began the crowning glory of the Grand Basin. The terraces of lawn rose from the southern edge of the basin to an altitude of eighty feet with a slope of five hundred feet. They formed a vast concave sweep of nineteen hundred feet width. Down four hundred feet plunged the water of three cascades with successive falls until it was buried in the spray of the basin. These cascades dwarfed previous artificial water effects. The one in the center poured forth from a source capable of discharging forty-five thousand gallons a minute. With fourteen falls of various depths rapidly widening the water descended to the basin. At the first fall the water was eleven inches deep and forty-three feet wide; the drop was twenty-five feet. Then came in succession falls of four, twenty and eight feet until finally a sheet of water one hundred and twenty feet wide swept down into the basin. The side cascades were but slightly less impressive than the center. On the summit of this immense crescent of lawn stood the Colonnade of States fourteen states and territories of the Louisiana Purchase - a succession of arches, each one occupied by a symbolic statue suggestive of the state it represented. The crescent was sixteen hundred feet long with towering pavilions at the ends and Festival Hall crowned by the greatest dome on earth occupying the center. Festival Hall, the beautiful Colonnade, the Terraces, and the Cascades constituted a central scene entirely new in exposition creations. From this center radiated the three great plazas, one the Plaza of St. Louis, six hundred feet wide; the others the Plaza of Orleans and the Plaza of Saint Anthony, three hundred feet wide. Upon these plazas faced the exhibit palaces. From the Colonnade of States there were views down these plazas with long facades on either side, a distance of nearly a mile. Festival Hall stood two hundred feet in height from foundation to the Victory on its apex, with a sun-kissing dome greater than Saint Peter's. The horns of the Colonnade ended in pavilions not so imposing - but no less beautiful than the architectural gem in the center. To fully appreciate the grand Plaza of St. Louis, the Grand Basin, the Cascades and the Colonnade of States, two extreme points of view were necessary. From the plaza between the palaces and the maples and the lawns was one magnificent view looking across the basin up the Cascades and terraces to Festival Hall, and the pavilions and the Colonnade of States. There was another not less entrancing view looking downward along the Cascades across the Grand Basin to the Plaza of St. Louis walled in by the lawns and terraces and palaces.

Operation of the Cascades:

Technical information regarding the operation of the Cascades is embodied in the report of H. F. Smith, mechanical engineer on the staff of Director of Works Taylor.

The cascade pumping plant was located under the east cascade, 2500 feet southeast of the power plant. The floor of the building was level with the water in the lagoon, to allow the pump suction to be as near the water level as possible.

The foundations for the three mammoth pumps and their driving motors consisted of one mass of concrete 70 feet in length by 8 feet in depth by 12 feet in width, having a leg on one aide extending to a depth of 15 feet. This leg also formed a retaining wall for the suction piping. No vibration was felt during the operation of the pumps.

The pump house was 80 feet by 30 feet, with 14 feet headroom. Owing to the limited headroom and lack of crane facilities the task of installing the pumping apparatus required considerable skill and forethought.

The Cascades were divided into three sections, main, east and west. The water flowing over the main spill of the main cascade, 92 feet above water level, was received through a 36-inch pipe delivering about one-half of the entire quantity of water.

The east and west Cascades received their water supply through 20-inch mains. Four large fountains were located in the lagoons, each having a 16-inch main; these produced very pretty effects.

The main header delivering water to the various mains was 52 inches in diameter, while the suction header delivering water to the pumps measured 90 inches in diameter.

The pumping apparatus consisted of three 36-inch centrifugal, motor-driven pumps having a capacity of 30,000 gallons per minute each when delivering water at 152 feet head. These pumps were direct connected to Westinghouse three phase, 6600-volt, 2000 horsepower motors, each, speed 370 revolutions per minute.

The pumps were arranged in parallel, but at no time did we have more than two operating at the same time.

The cost of building, foundations, piping, installation and dismantling was \$12.474 per rated horse power.

The existing labor conditions, together with the unfavorable location, were responsible for the high figure.

Water was pumped at a coat of \$0.147 per 1000 gallons. This high figure is due to the labor conditions at the time of operation.

The Plan of Illumination:

Will M. Dixon, electrical engineer on the staff of the director of works, in his report to Director Taylor, says of the illumination:

In making this report it has been the desire to give due credit to those whose earnest and beet endeavors were given to the work in its several stages, and who severed their connection with the Exposition before its completion.

To Henry Rustin, the first chief mechanical and electrical engineer, is due the credit of laying out the plant and the decorative lighting, but as Mr. Rustin was compelled on account of ill-health to be away from the city much of the time during the latter part of 1903 his ideas and plane were carried out by his assistant, Robert H. Moore. During the month of November 1903, Edward B. Ellicott took up the work as acting chief engineer and carried it on until Mr. Rustin's resignation, January, 1904, when he was appointed chief mechanical and electrical engineer, Mr. Moore continuing as assistant electrical engineer, until March 16, 1904, when he resigned, and the writer who up to that time had been second assistant, was promoted to fill the vacancy.

Mr. Ellicott took hold of the work with the firm determination of completing it before opening day, and was amply rewarded on April 30, 1904, when the final test came. Just one minute and nine seconds after the signal was given by President Roosevelt the entire plant was in motion, water was flowing over the Cascades; and at 7:30 p.m. the entire decorative lighting was turned on at the exact schedule time, and all concessions on the Pike whose wiring had passed the inspection of the St. Louis Fire Prevention bureau were amply provided with both light and power.

Mr. Dixon's report contains this interesting description of a feature which distinguished the Universal Exposition of 1904:

The decorative lighting scheme was designed by Mr. Rustin with the exception of the Agriculture and the Forestry, Fish and Games buildings. The management at one time contemplated the use of acetylene gas on these buildings but the scheme was finally abandoned, and late in the construction period it was decided to outline the two building with incandescent lights and not make an attempt to decorate them.

The design for the decoration of the buildings on the crest of Art Hill bordered somewhat on the spectacular as three colors were used - red, green and opal - each color being placed on a separate wiring system and controlled by means of a triple-pole, triple-throw switch located in the transformer rooms under the Cascades. The primary line supplying Art Hill was placed on an independent machine in the plant and the entire effect was built up gradually by means of the exciting current and held at full voltage (6600) for fifteen minutes and then gradually reduced to 800 volts, when another color would be thrown in service by means of the triple-throw switches and again built; up to voltage, giving a very beautiful effect. This operation was kept up during the entire evening and was the means of a great deal of speculation by visitors as to how it was accomplished.

In addition to the color effect there were three 30-inch projector lamps used for lighting the top spill of the main cascade; also three other projectors of the same class located on the Plaza of St. Louis that were used on special occasions for spectacular attractions.

CHAPTER VII

RECEPTION AND ENTERTAINMENT

Distinguished Guests—President Roosevelt's Two Visits— Vice-president Fairbanks and Speaker Cannon—Prince Pu Lun of China and Prince Fushimi of Japan—Vice-President of Mexico— Cabinet Ministers, Senators and Representatives—Cardinal Satolli

TO properly receive the Exposition's guests and to provide suitable entertainment devolved upon the Committee on Reception and Entertainment. This committee worked under the special direction of the President of the Exposition and in close co-operation with the Committee on Ceremonies. The committee consisted of Francis D. Hirschberg, chairman; Rolla Wells, vice chairman; John D. Davis, Dan C. Nugent, Thomas H. McKittrick, John Schrovers, Wilbur F. Boyle and until his death, October 1903, Issac W. Morton. The secretary of the committee was Ricardo Diaz Albertini. This committee's duties were rendered very important by reason of the extraordinary number of men of distinction who constituted the various foreign and state commissions, included in whose ranks were several princes and scions of reigning houses, a prince of the church of Rome, the vice-president of an important republic, members of foreign ministries and governors of all the states, all of whom honored the Exposition with their presence and were accorded every possible courtesy.

In addition to these notables, the exposition management almost daily found it necessary to extend hospitality to other distinguished persons who came from all parts of the globe. Aside from eminent visitors from abroad, St. Louis proved the mecca for prominent people from every section of the United States. Among the visitors were the President and Vice-President-elect of the United States, the Speaker of the House of Representatives, a former President of the United States, and other federal, state and municipal dignitaries.

The pre-exposition period brought numerous demands upon the committee's time and attention in extending courtesies to the people of prominence whose interest attracted them to St. Louis and the World's Fair site. Among these distinguished visitors were H. R. Highness, Prince Henry of Prussia; H. R. H., the Crown Prince of Siam; Counts Rochambeau and Lafayette, and members of the foreign diplomatic corps, as well as many officials and others prominent in affairs of our own country. All these were appropriately entertained and enlightened regarding the World's Fair and left St. Louis with agreeable impressions.

Chief among the events of the constructive period was the formal dedication of the great exhibit palaces of the Louisiana Purchase Exposition which

occurred on April 30, 1903, the centennial day of the Louisiana Purchase, in the presence of the President of the United States, Theodore Roosevelt, ex-President Grover Cleveland, a joint committee of Congress, ambassadors and ministers of twenty-six foreign governments, governors and representatives of over forty states, and dignitaries of the church without distinction of creed.

These dedicatory exercises covered a period of three days ending May 2nd, during which time the demands were unceasing and proved a severe tax upon the energies and resources of the Committee on Reception and Entertainment. There were large and elaborate receptions and banquets to the President of the United States and other visiting notables, and to the press, besides other social functions. Some of these banquets were attended by five hundred to six hundred invited guests.

To provide suitable accommodations for this unprecedented number of guests of honor and to make arrangements for housing the other eminent visitors was a task of no small magnitude. These three days comprising the Dedication period were among the most conspicuous in the history of St. Louis and of the Exposition. The people of this city never before had been called upon to meet at one time the requirements of entertaining so many people of distinction.

The time of the committee was occupied thence to the opening of the Exposition in bestowing attentions particularly upon the various foreign and state commissioners as they arrived to make arrangements for their respective exhibits and special buildings. These representatives were in many instances met at the depot and escorted to their residences, after which the committee endeavored in every practical way to administer to their entertainment and comfort.

A Directors' club was maintained in the West Pavilion on the World's Fair grounds. The membership was limited to the Directors of the Exposition, who extended honorary privileges to officials of the Exposition, foreign and state commissioners and visitors, including their wives and families. This club not only admirably supplied the facilities for official entertaining, but also furnished a meeting place where those actively engaged in managing the affairs of the great Exposition could exchange ideas and develop and promote a closer feeling of cordiality and mutual interest. The advantages of this club were well attested by its popularity, and by the further fact that it was the scene of every important entertainment that the size of the structure would permit. It was the recognized policy of the exposition management to confine entertainments and other official functions to the World's Fair Grounds. Under this policy the West Pavilion had an important part in the social life of the Exposition.

Preparations for the formal opening of the Exposition were commenced early in March and functions and ceremonies were planned on a scale to make this event on April 30, 1904, as brilliant and impressive as possible. The committee provided luncheon for 2,500 guests in the palace of Varied Industries; it was served directly on conclusion of the opening ceremonies at the Louisiana Purchase Monument.

The secretary of war, Hon. William H. Taft, represented the President of the United States on this memorable occasion, and when President Roosevelt in Washington touched the golden key that flashed the signal opening the World's Fair at St. Louis, there were nearly two hundred thousand people assembled who witnessed the President of the Exposition receive the message and declare

the greatest of exhibitions open to the world.

His imperial Highness Prince Pu Lun, a member of the imperial reigning house of China, attended as the president of the Chinese Commission, escorted by his suite and the assistant commissioners, Wong-Kai-Kah and Francis A. Carl.

Secretary Taft was so impressed with the magnificence of the scene that he signified his admiration by saying: "The vision is a dream."

The committee had much to do in looking after the reception and entertainment of the secretary of war, the large congressional delegation and an imposing array of governors and other people who were especially invited for this auspicious event. The smoothness which characterized the carrying out of every arrangement was the best tribute to the excellence of its management. This formal and successful inauguration of the actual World's Fair period was the signal for the commencement of a series of social events that in point of brilliancy and extent has never been surpassed, if equaled, in exposition history.

Among the many eminent visitors whom the exposition management took pleasure in honoring and entertaining were President Theodore Roosevelt, Vice-President-elect Charles W. Fairbanks, Speaker Joseph G. Cannon, H. I. H. Prince Pu Lun of China, H. I. H. Prince Sadanaru Fushimi of Japan, T. HH. Prince and Princess Hohenlohe-Schillingfurst of Germany, Cardinal Satolli, Vice-President Ramon Corral of Mexico, Monsieur Alfred Picard, the ministers of public works of Belgium and Cuba, the minister of finance of Germany, the president of the French council of state, Secretaries Hay, Shaw, Taft, Morton, Hitchcock, Wilson, and other members of President Roosevelt's cabinet; justices of the United States Supreme Court, ambassadors and ministers of foreign countries, Miss Alice Roosevelt, Miss Helen Gould and Miss Helen Keller.

In addition to the entertainment of those just mentioned, special courtesies were extended to the important bodies of eminent men and women composing such great international gatherings as the World's Press Parliament, the Congress of Arts and Science, the Congress of Lawyers and Jurists, and the Peace Congress, whose deliberations were carefully watched and discussed by the whole world. The committee's labors were also considerably augmented by the numerous special weeks and days allotted to various states and cities for their celebrations, which entailed the exchange of many civilities; also by the entertainment of juries of award.

Prince Pu Lun:

His Imperial Highness Prince Pu Lun, in line of succession in China, who presided over the Imperial Chinese commission, came to the World's Fair as the special representative of the Throne. Upon arrival in San Francisco Prince Pu Lun proceeded directly to Washington to pay his respects to the President of the United States. His highness was accorded a reception by President Roosevelt and other marked attentions were lavished upon him during his sojourn in the capital. He reached St. Louis in time to participate in the opening ceremonies, which he attended with a brilliant suite. So impressed was his highness with the grandeur of the scene that he expressed the following sentiment:

"It is like a glimpse of the rising sun! It typifies all that is grand in this life or the next."

In view of the exalted rank of Prince Pu Lun, elaborate preparations were made for his reception. He was met at Union Station by the Committees on Foreign Relations and Reception and Entertainment, headed by the President of the Exposition, the mayor of the city of St. Louis and the Chinese vice commissioners, Wong Kai-Kah and Francis A. Carl, by whom his highness was escorted in state to his headquarters in the Washington Hotel, where the members of the respective committees were presented to him.

Shortly after, the Prince, accompanied by his suite, made a formal call on the President of the Exposition in the Administration building. Prince Pu Lun remained in St. Louis about two months save for a brief visit to New York and New England. His presence was marked by a series of entertainments by World's Fair officials, foreign and state commissioners and people of the city, who shared in doing him honor. Notable among the entertainments was the garden party given in his honor by the chairman of the Committee on Reception and Entertainment and Mrs. Hirschberg. His highness manifested his appreciation of this generous hospitality by several brilliant functions that will prove memorable among the social events of the Exposition. Prince Pu Lun's charming personality and simplicity of manner made friends of all he met, and his departure from the World's Fair city was witnessed with sincere regret by those who enjoyed the privilege of meeting him.

His Eminence Cardinal Francis Satolli, special representative of His Holiness, the Pope, reached St. Louis late in June and was met at the station by the Committee on Reception and Entertainment and a delegation of prominent Catholics headed by His Grace, Archbishop Glennon, a band of music and squad of mounted police, who escorted the cardinal to the archepiscopal residence which he, as the archbishop's guest, occupied during his week's stay in St. Louis.

Cardinal Satolli was the recipient of attentions on all sides. The morning after the cardinal's arrival Austria's commissioner-general gave a breakfast in his honor at the imperial pavilion. The same evening the cardinal was given a dinner by Archbishop Glennon, which was attended by all of the bishops of the province. The next afternoon the chairman of the Committee on Reception and Entertainment and Mrs. Hirschberg were the cardinal's hosts at a garden party, and the same evening the French commission honored him with a dinner. The principal event of Cardinal Satolli's visit, however, occurred on the afternoon of June 20th, when nearly four thousand invited guests assembled in Festival Hall to pay honor to the prelate. The exercises were presided over by the President of the Exposition and closed with a reception to the guest of honor. Before the exercises he lunched at "Das Deutsche Haus" and at night was the guest of honor at dinner in the West Pavilion given by the President of the Exposition. A few evenings later the cardinal was honored by the imperial German commissioner-general with a banquet in the imperial German pavilion. Cardinal Satolli's visit to the Exposition fittingly ended on the Fourth of July when he was the guest of the exposition management at the review of the military parade which celebrated the anniversary of America's Independence Day.

A water festival conceived and carried out by the Reception and Entertain-

ment Committee on one of the evenings of the cardinal's stay reminded him of Venice. Before his departure the cardinal expressed his admiration strongly. "It is a most stupendous achievement," he said, "readily surpassing all previous efforts and making all future attempts to surpass it an apparently impossible task."

His Excellency, Ramon Corral, vice-president of the Republic of Mexico, with Mrs. Corral and a party of prominent Mexican officials who were selected by President Diaz to accompany his personal representative to the Exposition, arrived in St. Louis on October 10th direct from the City of Mexico. The vice president was heartily welcomed by the exposition management and became the recipient of many social attentions during his brief sojourn.

After a formal official call upon the President of the Exposition the next day, Vice-President Corral visited the Mexican pavilion and afterwards the Missouri state building to participate in the Missouri Day exercises. He was accorded a most cordial reception. He then inspected all of the Mexican sections in the various exhibit palaces and expressed himself as highly pleased with his country's displays. That night he was banqueted at West Pavilion by the exposition management. On the following evening a reception was given in the vice-president's honor by the commissioner-general of Mexico which was one of the notable social affairs of the Exposition. The next day his excellency toured the grounds in the Yellowstone Coach, accompanied by the President of the Exposition, and was lunched at the Tyrolean Alps en-route. Vice-President Corral and party were enthusiastic in their praise of the World's Fair and the welcome accorded them while in St. Louis.

Prince Fushimi:

His imperial Highness Lieutenant-General Prince Sadanaru Fushimi, personal representative of His Majesty the Emperor of Japan, arrived in St. Louis on November 17th from Washington, whither he went directly from Tokyo to pay his respects to the President of the United States. His highness was received at the capital with the deference and attention befitting his official station, by both government officials and the public.

Prince Fushimi was met at the station in St. Louis by the Committees on Foreign Relations and Reception and Entertainment, led by the President of the Exposition, the mayor of the city of St. Louis, the general commanding the northern division, United States Army, and the members of the imperial Japanese commission. In view of his military rank his highness was escorted to the Buckingham Club by a platoon of U. S. cavalry, assisted by a detachment of mounted police. The Prince and his suite went directly to their reception room and, in line, received the exposition officials, the mayor and the Japanese commissioners. That the presence of a member of the Emperor's family was thoroughly appreciated by the people of St. Louis was evidenced by the rapidly occurring functions held in his highness' honor. Among the most notable of these were the banquet given by the President and Directors of the Exposition in the West Pavilion, the afternoon reception by the imperial Japanese commission in the Japanese imperial gardens, the reception by the mayor of the city of St. Louis at his residence, the dress review of the Sixteenth United States infantry on the Plaza St. Louis, an attractive tea by the Board of Lady Managers in their

building and the dinner by the imperial Japanese minister to the United States at the St. Louis Club.

By his courtly and dignified bearing Prince Fushimi commanded the admiration and respect of all who had the honor of seeing and meeting him, and carried with him the cordial sentiments and best wishes of the people of St. Louis, proud of the privilege of entertaining so notable a representative of Japanese culture and manliness.

Charles W. Fairbanks, United States senator from Indiana and Vice President-elect of the United States, arrived in St. Louis on the morning of November 15th for a visit of a day and a half. He was escorted to the office of the President of the Exposition in the Administration building where he was presented to the Directors, World's Fair officials, citizens of St. Louis and visitors from other parts of the country who were attending the Exposition. He was then driven over the exposition grounds in the Yellowstone Coach, accompanied by the President and the Committee on Reception and Entertainment, stopping at various exhibit palaces to inspect the attractive displays which were pointed out by the chiefs of those departments visited. In view of the brief time allowed for the visit the Vice President-elect partook of a hurried luncheon at the West Pavilion as the guest of the President and then resumed his sightseeing under the latter's guidance, which included a visit to the Grand Trianon, the French national pavilion, to witness an entertainment given by M. Gerald, commissioner-general of France.

With the celerity that characterized his first day's movements Vice-President-elect Fairbanks arose early and, after participating in the ceremonies attending the departure of Liberty Bell for Philadelphia. Took a hasty view of the Philippine Reservation. Joseph G. Cannon, Speaker of the House of Representatives, was a member of this party and shared in the marked attention to the group of visitors.

No functions were arranged for the Vice-President-elect because of his limited time, beyond a handsome dinner at the German restaurant given by the exposition management. After the dinner the party repaired to the state dining hall of the imperial German pavilion by invitation of the German commissioner-general. There coffee was served and several hours spent most enjoyably in informal speeches by Vice-President-elect Fairbanks, Speaker Cannon, the President of the Exposition and others. The remainder of the evening was passed in visiting the Pike.

The Vice-President-elect was given an ovation everywhere he was seen on the World's Fair grounds. As the Yellowstone Coach slowly made its way along the crowded avenues the visitor was greeted with enthusiastic cheers mingled with loud requests for a speech, but his time was too limited for speech-making and the crowds had to be content with hand-waving and hat raising. He was escorted to Union Station by Director James Gay Butler in his automobile, which made record time in order to catch the Vandalia train awaiting their arrival. Vice-President-elect Fairbanks conveyed his impression of the Louisiana Purchase Exposition by declaring it "The wonder of the age."

President's Day:

The President of the United States reached the World's Fair grounds early in the morning of November 26th in a special train which was switched to the lawn in front of the palace of Transportation. The engine, with steam up, remained coupled to the train throughout the President's visit as a precaution in the event of an emergency. At 9 o'clock the President of the Exposition, accompanied by the mayor of St. Louis, the Committees on Ceremonies and Reception and Entertainment, the general commanding the northern division, United States Army, foreign commissioners and World's Fair officials, left the Administration building in a body and marched to the presidential train. The party entered the train and were met by President Roosevelt. They took carriages for a tour of the exposition grounds.

Mrs. Roosevelt, Mrs. Douglas Robinson, Miss Roosevelt and other ladies of the presidential party were received at the Government building by Mrs. Francis, by the wives of the chairmen of committees and by the president of the Board of Lady Managers.

On this round of the World's Fair grounds, November 26th, President Roosevelt covered the territory from the eastern to the western fence. He visited in turn the palace of Liberal Arts, United States Government building and fisheries, German imperial pavilion, French national pavilion, Mexican national pavilion, British royal pavilion, Holland building, Swedish royal pavilion, Austrian imperial pavilion, Belgian royal pavilion, Chinese imperial pavilion, Cuban national pavilion, Brazilian national pavilion and Italian royal pavilion. He was then driven to the imperial Japanese gardens and there entertained with fencing bouts in old Japanese style and regaled with tea served by dainty maidens in native costume.

After leaving the Government building where the President held an informal reception to the National Commission, United States Government Board, Board of Lady Managers and World's Fair officials, he was taken to the reviewing stand in front of the building and there reviewed over two thousand men in line consisting of a detachment of mounted police, companies of United States infantry, squadrons of cavalry and a battalion of Philippine Scouts. The Presidential party was escorted through the exhibit palaces by the chiefs of the respective departments, and at the foreign pavilions he was received by the respective commissioners of those countries visited.

The Presidential party took luncheon in the West Pavilion after leaving the Japanese gardens and just after two o'clock resumed the tour. They were driven to the Philippine Reservation, where the President viewed with much interest the rifle and bolo drill without commands and with the accompaniment of the Constabulary and Scouts bands. President Roosevelt spent his longest time in the Philippine Reservation, where he visited the native villages and shook hands with the various sultans and chiefs of tribes, who presented him with souvenirs of their handiwork in the shape of native weapons, golden and beaten-silver bowls and other ornaments. A number of very handsome presents were made to the President by the leading foreign commissioners whom he visited, among the most notable of which was a silk scroll picture, eight hundred years old, from the Chinese commission.

From the Philippine Reservation the party proceeded to the palace of Machinery and the palace of Electricity. From the balcony of the latter, the President witnessed a special display of fireworks in his honor around the Cascades. A remarkable incident of his strenuous tour was the fact that the schedule time as laid out for the tour was maintained to such a nicety that the party completed the day's sightseeing only five minutes late in leaving the palace of Electricity. The President was driven to the home of William H. Thompson, treasurer of the Exposition, which was his residence during the brief stay in St. Louis.

A fitting climax to President's Day at the World's Fair was the banquet at eight o'clock in the Tyrolean Alps. President Roosevelt entered the great hall to the strains of the Star-Spangled Banner by one of the world's greatest orchestras and the ringing cheers of six hundred enthusiastic guests. This proved the most brilliant function of a period noted for its entertainments. The banquet hall had been appropriately decorated with streamers of bunting, with the national and exposition colors predominating, stretched from the ceiling to the massive pillars. Smilax with American beauty roses was entwined about the balconies. The exposition orchestra of one hundred pieces, which occupied the stage at the southern extremity of the hall, was banked behind pillars of roses. Roses and carnations were scattered along the tables. The lighting was with myriads of incandescent lights, softened by decorations of flowers, hanging pendant from four massive electroliers swinging from the ceiling. The arrangements bore testimony to the painstaking efforts of the Committee on Reception and Entertainment.

The entrance of the President's party, in which were included President and Mrs. Roosevelt, Miss Alice Roosevelt, Mr. and Mrs. Douglas Robinson (the President's sister and brother-in-law), Secretary Loeb, the President of the Exposition and Mrs. Francis, the president of the National Commission and Mrs. Thomas H. Carter, the mayor of St. Louis and Mrs. Wells, the governor of Missouri, the governor-elect of Missouri and Mrs. Folk, Generals Bates and Young, Madame President Manning of the Board of Lady Managers, and others, was the signal for a demonstration that marked a climax of exposition enthusiasm.

The menu was the most elaborate served at the Exposition and the banquet consumed two hours. The divine blessing was invoked by Bishop Daniel S. Tuttle of the Episcopal Diocese of Missouri. Toasts were offered and responded to by the President of the United States and the President of the Exposition.

No visitor saw more in less time than did the President of the United States. He walked down the aisles of the great exhibit palaces, expressing delight with the magnificent showing on all sides. He permitted his eyes to rest but a minute on any particular display and then was off in a hurry to some other point of interest. From the time he left the train until he completed the last building on the grounds, his steps never seemed to weary, and Mrs. Roosevelt, too, appeared tireless.

The day following, Sunday, President Roosevelt spent quietly resting at the home of Treasurer and Mrs. Thompson. In the morning he attended church and, after a short drive in the afternoon, called at the residence of the President of the Exposition and Mrs. Francis, with whom he and his family dined informally.

Just before the train left the World's Fair grounds a minute after midnight Sunday, President Roosevelt stepped on the platform and thanked the detec-

tives, secret service men and policemen cordially for their unwearied care of him and for the preservation of order during his stay. He afterwards shook hands with them. Shortly prior to retiring the President was asked by an eastern correspondent how he had enjoyed his visit, and he replied: "Why, my boy, I've had the time of my life!" This remark, made on the impulse of the moment, amply confirmed the sentiment expressed by him at the banquet a few hours previous, when he said:

I think that the American who grudges a dollar that has been spent here is not so far-sighted as he should be. It is a credit to the United States that this Exposition should have been carried to so successful a conclusion, and of course it is preeminently a credit to Missouri and St. Louis.

This recital of the social phases of the World's Fair could not with propriety be closed without due recognition of the very cordial co-operation and assistance at all times given the exposition management by Governor Alexander M. Dockery and the other state officials, Mayor Rolla Wells and his colleagues of the municipal government, and the many public-spirited men and women of Missouri generally and of St. Louis in particular who spared neither time nor expense to maintain the reputation for hospitality enjoyed by this city and this commonwealth. Special appreciation is also expressed for the active and valuable aid rendered by the Board of Lady Managers under the leadership of Madame President Manning. The members of this board were ever ready to help the committee receive and entertain the exposition's guests and the gracious manner in which these social amenities were performed added in a large measure to the success of the occasions in which the Board of Lady Managers participated. Acknowledgment must likewise be made of the generous and kindly spirit manifested by the foreign and state commissioners in co-operating with the exposition management in every way for the success of the many enjoyable functions in which they were mutually interested. The highly creditable and satisfactory manner in which the manifold responsibilities devolving upon the Committee on Reception and Entertainment were executed was cause for congratulation. In good measure it contributed to the success of the Louisiana Purchase Exposition.

CHAPTER VIII

HOLIDAYS

Decoration Day—Welcome to Veterans—A Military Pageant Without Precedent—Fourth of July—The Parade—Declaration of Independence and Liberty Bell—Address by William J. Bryan—Dinner to Cardinal Satolli—Labor Day—Special Exhibit Days

THE Louisiana Purchase Exposition has received no guests - it will receive no guests to whom it has extended or will extend a more cordial welcome than the men who by their sacrifices and valor established the perpetuity of the American Union." In these words, the President of the Exposition welcomed the veterans on the 30th of May. Memorial Day stands out among the notable days of the Exposition. In point of attendance, it was one of the greatest of the opening month, the turnstiles recording the entrance of 90,174. The participation in the procession and the character of the exercises were extraordinary. Possibly in the history of Decoration Days no such comprehensive assemblage of the country's defenders has been seen. All branches of the United States service had representation. In the long column marched United States infantry, cavalry and artillery, marines, detachments of the United States Signal Corps, of the United States Hospital Corps, and of the United States Navy. The full corps of West Point Cadets, a battalion of Philippine Scouts and a battalion of Philippine Constabulary added unusual features to the pageant. A regiment of the National Guard or Missouri, a regiment of cadets from the University of Kentucky, south of the Mason and Dixon line; a company of cadets from the Ohio Wesleyan University, north of the Mason and Dixon line; a battalion of cadets from the Culver Military Academy of Indiana, furnished object lessons in the development of the citizen soldiery, in the growth of military education and in the recognition, north and south, of Memorial Day. By token of respect for the occasion a company of Italian marines and battalions of British and Boer veterans of the war in South Africa joined in the parade. The military column escorted the Grand Army of the Republic, Sons of Veterans, Service Men of the Spanish American War and Veterans of the War in the Philippines.

In four divisions the military and the veterans marched from Kingshighway through Forest Park and into the Parade entrance of the Exposition. A slight rain fell, but this did not prevent one of the largest gatherings on the Plaza of St. Louis.

As the procession marched by the Louisiana Monument it was reviewed officially by the President of the Exposition and Major General John C. Bates. The unofficial participants in the review were representatives of all nations and races. Headed by their six sultans the Lanao Moros and led by their datto the Samal Moros, attired in their brilliant oriental costumes, gazed with wonder upon the splendid display of armed men. The throngs, numbering many thousands,

demonstrated the enthusiasm aroused by prolonged cheering.

The review over, the veterans, carrying their colors, marched into Festival Hall taxing the capacity of the Exposition's greatest auditorium. The impressive exercises were opened with prayer by Reverend Samuel J. Niccolls, D. D., of Ransom Post. Addresses were made by two who had held the high office of Commander-in-Chief of the Grand Army, Major Leo Rassieur of St. Louis and Major William Warner of Kansas City. The President of the Exposition, dwelling upon the fitness of this observance of Memorial Day by the Exposition, said:

The Exposition, whose guests you are today, is a striking example not only of the energy and breadth of view of the American character, but a most gratifying indication of the spirit that pervades our entire people. When we bear in mind that within these two square miles forty-two of the states and territories and possessions of our government have established domiciles, have erected structures where their citizens may exchange greetings and extend hospitality to visitors from other sections, and when we remember that practically every state and territory and possession of our Union is represented on these grounds, we are impressed with the pride cherished by every state, we are awed by the diversity and the magnitude of their products, but we admire above all the brotherly spirit, the national patriotism, which bring together in almost loving intercourse people so far separated by distance and possessed of almost a conflict of material interests; we salute with ineffable admiration the sentiment that unites every community in a movement which involves the credit of the entire country and appeals to the patriotism of all.

The participation of our foreign cousins in this celebration is a compliment to our government and an unmistakable evidence of the universal good-will cherished toward the people of the United States. The Exposition felicitates itself on the encouraging progress thus far made, and entertains the hope that above and beyond the commercial and material benefits that will flow from all people participating in this international competition, the Universal Exposition of 1904 will prove another decided step towards the establishment of that universal peace for which all right-minded people are striving; that it will render still more illustrious the deeds of the members of the Grand Army of the Republic by making war obsolete and a thing of the past.

On this national holiday set aside to commemorate the sacrifices and the achievements of yourselves and your brothers-in-arms, it is proper that you should assemble on these grounds and in this, the central structure of a wonderful city, surrounded by the local habitations of the states which fought on both sides of that unparalleled contest; that we should here cement still closer the ties that bind us together by pledging anew our allegiance to the flag of our common country.

An address by Honorable Samuel R. Wildman of Norwalk, Ohio, followed.

Lincoln's immortal words at Gettysburg were repeated by T. D. Kimball of Ransom Post.

The Paragon Quartet sang "America," the vast audience joining.

Thus concluded one of the most notable of the historic ceremonies of the Universal Exposition of 1904.

Fourth of July:

Arrayed in national colors, holding an American flag, a daughter of the Louisiana Purchase, Rose J. Flynn, of St. Louis, stood beside the Liberty Bell in the Pennsylvania building and read the Declaration of independence. The Universal Exposition of 1904, celebrating the acquisition of Louisiana Territory, kept the

Fourth of July gloriously. Through the gates streamed the people until the automatic counters showed 179,258 admissions.

The Exposition's observance of the day took on many forms. In the morning was given the most elaborate military parade since Opening Day, every armed and uniformed organization on the exposition grounds, together with the United States troops from Jefferson Barracks, participating. The parade formed at International Avenue and Olympian Way. The route was through the principal thoroughfares of the exposition grounds and past a reviewing stand in front of the Government building into the Plateau of States. Upon the reviewing stand were Major General John C. Bates, commander of the northern division of the United States Army; His Eminence, Cardinal Satolli; Archbishop John J. Glennon, the representatives of foreign governments, the National Commission, the government exhibit board, state and territorial commissioners, the President, Directors and department heads of the Exposition.

Participating in the parade were the Philippine Scouts, the 26th United States infantry band, the 119th Company Coast Artillery, a battalion of United States Marines, the Philippine Constabulary, the 8th United States Cavalry band and a detachment of the United States Hospital Corps. The second division was made up of Jefferson guards, the Government School Indian band, the 1st Regiment, Missouri National Guard, the Columbus, Ohio, Rifles, the Edisto Rifles, a company of the 2nd Regiment, Georgia National Guard and the cadets of the Northwestern Military Academy. The precision of movement and the inspiration of music caught the patriotic spirit of the crowds. There was enthusiastic cheering as each military organization passed in review. The broad stairway leading up to the United States government building was completely occupied with a crowd of several thousand spectators.

The southern part of the exposition grounds had been prepared for picnic parties. On the blue grass and under the great oaks thousands of families and family groups spent the noonday about improvised tables. The afternoon program was interfered with by a drenching shower, but only to the extent that the program was carried out under roof rather than upon the Plaza of St. Louis. It had been intended to hold a meeting at the base of the Louisiana Monument where Honorable William J. Bryan and Honorable Lafayette Young were announced to deliver Fourth of July orations. Adjournment to Festival Hall was compelled by the rain. The great auditorium was insufficient to accommodate those who wished to listen to the speakers. Thousands were turned away at the doors. The exercises began at 2 :30 p.m., with selections on the grand organ by Charles Galloway, the official organist.

Judge Franklin Ferriss, general counsel of the Exposition, was temporary chairman, introducing Senator Thomas H. Carter, president of the National Commission, as President of the Day. Governor George C. Pardee, of California, spoke first, conveying fraternal and patriotic greetings from the Pacific Coast. He was followed by James Hamilton Lewis, of Chicago, who spoke on the problems of capital and labor and their relation to the welfare of the people.

William Jennings Bryan, of Nebraska, was presented by Senator Carter as "The Political Gladiator of the Louisiana Purchase."

"Not one who visits the Exposition," said Mr. Bryan, "but returns home astonished at the extensive displays even of his own state." The address was pa-

triotic. "The heart controls the life;" said Mr. Bryan, "this government is strong because it is built on the hearts of the people. A government resting on bodily strength is not strong; a government resting on the intellect may not be strong, but the government that rests on the hearts rests on a solid foundation that can never be shaken. You cannot build a nation on fear. It must be built on love."

Lafayette Young, of Iowa, made the closing address, after which the audience arose and sang America led by Captain R. G. Harrison, of St. Louis, "the old singer of the Army of the Potomac."

A balloon race was one of the most attractive of the afternoon incidents. Two balloons ascended almost simultaneously, one carrying Professor Carl E. Myers and his wife, the other, Professor Tracy A. Tisdell. The start was made from the aerodrome in the western part of the grounds at a given signal. Both balloons went up nearly straight for a thousand feet and then drifted toward the east.

One of the centers of patriotic interest was the state building of Missouri. Some thousands of Missourians assembled there and proceeded immediately after the procession to the steps of the Government building, accompanying the President of the Exposition and Governor A. M. Dockery, both of whom delivered addresses. Musical selections were played by Ellery's band. The St. Louis troops participated. In the evening "an old-fashioned country dance" was given in the Missouri building, free to everybody.

The celebration of the day by the state commission of Louisiana took the form of an entertainment in the cabildo.

The Iowa state building was the scene of one of the interesting celebrations. The exercises began there at 9:30 in the morning with an organ recital by Mason Slade, of Des Moines. At 11:30 the assembly room was filled with people to hear addresses. James H. Trewin, of Cedar Rapids, presided. Professor Peck, of St. Louis, led in the singing of patriotic songs. The Declaration of Independence was read by Norman Thwaites, a newspaper man of London. George F. Rinehart, of Newton, Iowa, recited an original poem, *The Pioneers*. Addresses were made by the President of the Exposition and George H. Beeman of Washington, D. C. At 3:00 in the afternoon a piano recital was given by Frank Nagel, of Des Moines, assisted by Mrs. Nagel, soprano. At 4 :30 an organ recital was given by H. Dyer Jackson, of Quincy, Illinois.

In the New Jersey building, Washington's Headquarters at Morristown, the day was celebrated by an informal reception in honor of the New Jersey delegation to the National Democratic Convention. The delegates were dined at the German restaurant following the reception.

Illinois and California united in the Fourth of July exercises which were celebrated at the Illinois building at 5:30 in the afternoon. An address was made by Walter Warder. The Declaration of Independence was read by J. N. C. Shumway, of Illinois. The oration of the day was delivered by Governor G. C. Pardee, of California. A notable event was the singing of "My Own United States" by Mrs. E. B. Willis, of California.

The British and Boer contingents in camp on the grounds celebrated the day with a wedding reception at Temple Inn in honor of General and Mrs. Piet Cronje. A luncheon was served in South African style, with the names printed in Dutch. At the top of each menu card were crossed British and Boer flags with

the inscription "Whether the Cause Be Right or Wrong, the World Honors Brave Men and Glories in Brave Deeds."

In the Virginia building, a reproduction of Monticello, the home of Thomas Jefferson, author of the Declaration of Independence, were held exercises of more than ordinary interest. The addresses, all of which paid tribute to the memory of Jefferson, were by Joseph M. Bryant, of Richmond, Virginia; ex Governor Robert E. Pattison, of Philadelphia, and the President of the Exposition.

In the Stadium, notwithstanding the bad condition of the grounds because of the rain, athletes contended in various World's Fair championship events.

At the German restaurant in the evening was given a dinner in honor of Cardinal Satolli by Imperial Commissioner-General Theodor Lewald. The guests included Archbishop Glennon, President Francis, exposition officials and foreign commissioners.

At the Utah building a reception was given to visiting officials of Salt Lake City.

The rain interfered with the archery and tepee-raising contests, basketball games and other competitive events by Indians which were to have taken place on the Indian plaza. For the outdoor exercises a musical-literary program was substituted in the Indian School Hall. The program included the scarf drill of the little Indian kindergartners, war songs and war dances by the Sioux tribes.

In the Pennsylvania building the dramatic recitation of the Declaration of Independence, by Miss Rose J. Flynn, standing beside the Liberty Bell, was supplemented by the addresses of ex-Governor Robert D. Pattison and Colonel James H. Lambert, executive officer of the Pennsylvania commission. The building was thronged all day long with visitors eager to see the Liberty Bell.

In the Mining Gulch a special program in honor of the day was begun with the dropping of a torpedo of nitroglycerine into the oil well, the explosion sending up a large volume of rock and earth. At the California gold mining exhibit the gold mill turned out the first bar of gold. In the evening a reproduction of Colima Volcano of Mexico was given at the Carrizo copper mining exhibit. The twenty-mule borax team paraded, bearing a Goddess of Liberty surrounded by little girls dressed in white. A chorus of Welsh singers from Pennsylvania was the attraction at the Anthracite Coal Mine.

The Rhode Island building entertained, through Commissioner George N. Kingsbury, the delegates to the Democratic National Convention.

At the Connecticut building a company of Yale University cadets was given a reception, young ladies from the various state buildings having been invited by Mrs. C. C. Monson, hostess of the building, to aid in entertaining.

Labor Day:

On Monday, the 5th of September, many thousands of stalwart men marched to the Exposition to celebrate Labor Day, and with them came many more thousands of children who were given free admission to join in the celebration.

The day began with a parade in which the various labor organizations participated. Through the avenues and ways of the Exposition paraded the men who had contributed the muscle and the mechanical skill to the construction of the palaces.

Following the parade, the members of the organizations and their families formed hundreds of picnic parties in the grove south of Art Hill. Later in the day athletic events between members and teams of the various unions were contested in the Stadium.

The procession, which started at 10:30 a. m., was composed of seven divisions representing the various building and allied trades of St. Louis, with visiting organizations from Alton, East St. Louis and other nearby cities. Ten bands furnished music for the marchers, most of whom wore uniforms and badges. The division composed of the united brotherhood of carpenters and joiners, the millwrights and mill men was notably strong.

C. W. King was marshal of the day, assisted by Division Marshals L. H. Lacey, Oscar Layton, Mike Shannon, W. A. Heates, Patrick Connors and Frank Wyant.

The parade was reviewed from the platform at the base of the Louisiana Purchase Monument by the President and the officers of the Exposition. Besides those mentioned the organizations participating in the demonstration included the brotherhood of painters and decorators, the electrical workers, the hoisting engineers, the composition roofers, the sheet metal workers, the steam fitters, the gas fitters, the plumber laborers, the plasterers, the marble workers, the stone masons, the lathers.

The fireworks display in the evening drew the largest gathering up to that date in the Stadium. Among the set pieces were the Emblem of Labor in colored fire and portraits of Samuel Gompers and H. W. Steinbiss.

Special Exhibit Days:

Among the special days of the Exposition on which notable features or programs were offered as special attractions to the public were those arranged by the various exhibit departments. Prominent among these were: Transportation Day, Electricity Day, Manufacturers' Day, Liberal Arts Day, Mines and Metallurgy Day, Machinery Day, Agriculture Day, Anthropology Day. On these special days, under the direction of the chiefs of the respective exhibit departments, the exhibitors in the department organized special programs, which in each case proved to be of marked merit and popularly successful in a high degree. Of the character of these days and the entertainment offered by them the following report of the proceedings of Transportation Day by the chief of the department of Transportation is indicative:

Saturday, July 30th, was celebrated as Railroad and Transportation Day under the auspices of the Transportation Exhibitors' Association. The attendance was the largest up to that time of any day except the opening and the Fourth of July. The Transportation building was handsomely decorated, as were all of the exhibit sections in the building.

The events in celebration of the day began with a water parade about 11 a.m. The President of the Exposition, in a special launch decorated with flowers and white doves, led the way. Upwards of fifty launches and gondolas were in the parade. There were strange craft representing almost every country or the globe, gaily decked with flowers and palms. The line moved east to the main lagoon, south to the Festival Hall, and from the Cascades around the palace of Education, crossing the main lagoon diagonally and proceeding to the palace of Transportation. The line was so long that when the

President's launch had made the circle of the palace of Education and crossed the main lagoon it passed the end of the parade. Following the circuit of the lagoons by the line of boats the participants in the parade assembled in the Grand Basin, where, with music from the bands of a dozen different nationalities, the great pageant was reviewed and dispersed.

The procession lasted an hour, and its novelty kept the immense audience around the lagoons alive with applause. Among the craft used in the parade were electric launches, gondolas of Venice, Esquimaux kayak, Alaska Indian boats, miniature warships and Philippine canoes. The Philippine reservation had two outriggers filled with Moros, while diminutive specimens of the Filipinos, filling three little shells, brought forth a great deal of applause. Visayans and Igorrotes from the Philippines, Indians in full war paint, and Hindus, Russians, French, Esquimaux, negroes and many other people from the Pike, wearing the costumes of their native countries, added to the picturesqueness of the scene. Among the novel boats was The City of St. Louis, showing the industries of the city; America, upon which the Statue of Liberty was displayed, and the peacock boat, carrying figures costumed in attractive style. The railroad float contained a floral engine and cab.

In the afternoon came the event of the day, the land parade, starting at the southwest corner of the Transportation building, at four o'clock. All nations of the world, with their peculiar and distinct types of transportation, were represented. There were elephants, camels, horses, donkeys, ox teams, jinrikishas, Indians with their ponies and travaux, automobiles, and in fact every variety of vehicle and beasts of burden which one could think of in connection with such a display.

Particular features of the parade were a twenty-mule team hauling several large wagons coupled together, representing transportation of borax from Death Valley, Cal.; several automobiles loaded with Igorrotes from the Philippines exhibit; and particularly the representation of several railway supply manufacturing firms by large bodies of employees. The St. Louis Car Company was represented by 3,000 employees in uniform and in line, carrying banners and emblems appropriate of the several departments of car building. This was pronounced by experts one of the finest industrial parades ever witnessed. It has been fitly recognized by the bestowal of a special commemorative grand prize medal to the company.

The American Brake Company division of the Westinghouse companies was represented by its officials, seated in an automobile, and by 1500 employee in line of march, their special uniforms consisting of white trousers, blue waists and Chinese straw hats. The Wabash railroad was represented by 150 men in the parade. The St. Louis Car & Foundry company paid for 2,000 entrance tickets for its employee. All the horsemen of the Boer War exhibit were in the parade, as also their peculiar two-wheel carts and ox trekking teams. Space forbids going into all of the details, but 7,000 men participated in the parade, in a line reaching something over three miles in length. At the Esplanade in front of the U. S. Government building, the parade was reviewed by the President of the Exposition, the director of exhibits, and other exposition officials and guests.

The Black-Eyed Susan of the fields was selected as the flower of the day, and it was everywhere to be seen in the buildings and pinned to the clothing of the visitors. Within the Transportation building there was a lively stir all day long. The exhibitors from each of the great exhibit palaces came at different hours in procession beaded by bands, and marched through the building, receiving the welcome of the transportation men. The building was in gala attire, decked with flowers and draped with bunting and flags.

From noon until two o'clock in the afternoon a lunch was served in the reading room of the Transportation building, which had been decorated in Japanese style with

flowers. Refreshments were served by Japanese girls in native costume.

At 3:00 p.m. President Francis and Directors of the Exposition, Baron Matsudaira of Japan and many of the foreign commissioners visited the Transportation department. The contest of amateur "barkers" on the Pike in the evening added much to the life of this amusement center. The local railway passenger agents, who contributed to the fun, put forth their best energies. A jury judged the ability of the contestants. The successful "spieler" was presented with a silk hat and a pair of slippers. The great day closed with a display of fireworks in the lagoon.

Another special day participated in by the department of Transportation was Automobile Day, in which the principal feature was a parade by hundreds of automobiles of all styles. This parade was of special interest, as it was in the nature of a climax to the great long-distance endurance run from New York and other eastern points via Chicago to St. Louis, which was the automobile event of the year. The participants joined in the parade through the exposition grounds with their vehicles in the condition in which they had arrived.

The features of Electricity Day included special demonstrations in connection with principal exhibits, notably the wireless telegraph including test messages between St. Louis and Chicago. In the evening the building was brilliantly illuminated within and without, also the lagoons adjoining. A reception was held in which guests were received by Thomas A. Edison, Professor Elihu Thompson, Mrs. Moise Ascali and exposition officials. Refreshments were served on the south balcony of the palace of Electricity, and dancing was indulged in on the floor of the main corridor of the building.

Special events of Manufactures Day were attractive demonstrative exhibits in the two palaces of Manufactures and Varied industries, an old-fashioned country circus on the plaza between them and the distribution by prize coupons of 5,000 articles valued at \$25,000 to visitors. A special balloon ascension was among the features of Liberal Arts Day; also a notable demonstration of operating exhibits. Mines and Metallurgy Day included a program of typical mining camp scenes and events in the Mining Gulch. Machinery Day, in addition to emphasizing the extraordinary character and interest of the remarkable array of operating exhibits in the palace of Machinery, was elaborately social, embracing a general afternoon reception in the Japanese pavilion and grounds adjoining the palace of Machinery and a reception and ball in the corridors of the Machinery building in the evening. Agriculture Day and Horticulture Day were notably popular, made so by the liberal disposition of confections, delicacies, fruit and souvenirs, to visitors.

The number of exhibitors represented in each of the various exhibit departments may give an idea of the extent of the participation in these special days. The great natural enthusiasm with which all entered into the work of making these celebrations successful was augmented by the spirit of friendly rivalry which prevailed between the several departments. These special exhibit days were notable events of the Exposition.

In connection with special days and special features on general occasions at the Exposition the department of Anthropology contributed materially to the attractions offered. On July 16th the Plaza of St. Louis was the scene of a remarkable gathering of primitive race groups which united in rendering a characteristic program of native sports and festive demonstrations. This event proved so popular that similar programs were presented at different intervals at other points on the Exposition grounds.

In this connection the living features of the Philippine exhibit, illustrative of native customs, practices and pastimes, were a continuous attraction, all of which were emphasized by elaborate programs and scrupulous attention to detail on Philippine Day.

Perhaps the most notable special events participated in by the primitive tribes present at the Exposition were the athletic competitions conducted under the direction of James E. Sullivan, the chief of the department of Physical Culture, on August 12th and 13th, which were known as Anthropology Days, at the Stadium. In these extraordinary competitions practically every alien race represented upon the exposition grounds participated. The events were carefully arranged and faithfully carried out to demonstrate the comparative skill, speed and endurance capacity of the contesting peoples; also, to establish their comparative efficiency in these attributes in relation to the civilized races. The records secured as a result of these contests are of distinct scientific value and have been carefully compiled and preserved.

Some of the events were spectacular. The peculiar and lively interest attaching to the whole series of competitions may be realized when the great variety of races represented at the Exposition is recalled, including African pygmies, giant Patagonians, Ainus, numerous tribes of American Indians, also of Filipinos, Esquimaux, Cliff Dwellers, Kaffirs, Hindus, Singhalese and others, a total number exceeding 2,000. No such concourse or tournament had ever been beheld previously, or at least none is recorded in the history of the world.

CHAPTER IX

DEDICATIONS OF PAVILIONS

German Day Fourth in Attendance—The Grand Trianon—The Orangery—Swedish Day—Belgium Entertains the Orphans—Japanese Reception—Italians Celebrate The Discovery of America—Cuba's National Anniversary—Functions of Austria, Mexico, Brazil, Siam, Canada

THE formal opening of "Das Deutsche Haus," Germany's national pavilion, took place on Thursday afternoon, May 5th. Official announcement of the opening was made at 4 o'clock by the imperial chimes in the tower above the building, a reproduction of the famous Charlottenburg castle near Berlin. Prince and Princess Hohenlohe-Schillingfuerst and party from Germany arrived at 5 o'clock escorted by the President and other officers of the Exposition, their arrival being heralded by a military band, the Constabulary band from the Philippines. Two companies of Philippine Scouts stood at present arms in front of the building as the distinguished visitors proceeded from their carriages to the main entrance. The band played "Hail Columbia" and the vast crowd gathered on the plaza cheered with enthusiasm.

The guests were received in the Eichen gallery by Dr. Theodor Lewald, Germany's imperial commissioner-general, and Mrs. Adolphus Busch of St. Louis. Nearly a thousand invitations had been issued. The handsomely furnished rooms were thronged with ladies and gentlemen until after 6 o'clock. Among the visitors were Prince Pu Lun and staff from China, accompanied by Wong Kai-Kah, China's imperial commissioner-general at the World's Fair; Mrs. and Miss Borganiss of Prince Hohenlohe's party; Count Rumersirch, of Germany; Prince and Princess Ratibor; Baron von Stibral, Austria's commissioner-general; F. C. Rieloff, Germany's imperial consul in St. Louis; Mayor Rolla Wells; Mrs. Daniel Manning, president of the Board of Lady Managers; members of the National Commission and foreign and state commissioners, and many others.

Emperor William's wedding presents were exhibited in the Brandenburger room, furnished in the style of Frederick the Great's favorite room in the Brandenburger Castle. In the "Tressen Saal" were shown other priceless presents from the imperial house of Germany. All of the galleries and halls were decorated with laburnum trees, roses, carnations and hyacinths. Bronze busts of some of Germany's great soldiers, statesmen and men of letters lined the walls. Panel paintings and tapestries of German scenes added to the historical interest of the appointments. Luncheon was served in the reading room on the first floor, which had been appropriately decorated for the occasion.

German Day, October 6th, was one of the great days of the Exposition. In total attendance it was surpassed only by St. Louis Day, Labor Day and Francis Day (the closing day). Early in the afternoon a thousand prettily costumed girls and boys from the local turnvereins marched into St. Louis Plaza and gave a series of exercises in three divisions with wands, flags and Indian clubs. The evolutions, which were performed to music, made one of the prettiest pictures seen on the plaza during the Exposition. Military drills and gymnastic exercises by the older members of the turnvereins followed, the exhibition being witnessed by 20,000 people.

A large platform had been erected in front of the German national pavilion and here German Day was celebrated in the afternoon by a throng of people extending as far in one direction as East Pavilion on Art Hill, above the Cascades. The platform was occupied by a number of distinguished persons, the German empire being represented by Ambassador von Stenberg from Washington, D.C., Commissioner-General Lewald and his staff and F. C. Rielotf, imperial German consul in St. Louis. Dr. Emil Preetorius, the Nestor of the German American press in the World's Fair city, presided, opening the exercises with an eloquent address and introducing each of the succeeding speakers with a few appropriate remarks. "Das Deutsche Lied," sung by a chorus of 1500 voices, was followed by a short address of welcome from Mayor Wells. President Francis told of the cordiality with which he had been received by Emperor William in Berlin and the latter's promise that the German empire would be fittingly represented at the Louisiana Purchase Exposition. "The Emperor kept his word," said President Francis, "for the German exhibits at this Exposition are the greatest ever made by that country at any exposition."

The next speaker was Baron von Sternberg, the German ambassador. He spoke of the pride he felt in being present as the representative of Emperor William. He closed by reading the following telegram from the Emperor:

I convey my imperial greetings and congratulations to those dauntless citizens of America whose wish it has been that the World's Fair at St. Louis should not pass by without the celebration of a German Day. May the glorious day be celebrated in unmarred rejoicings and stand as a worthy testimonial to the important part played by the German immigration in the wonderful development or the great trans-Atlantic republic.

Carl Schurz, formerly United States Senator from Missouri, later a member of President Hayes' cabinet, and at that time a resident of New York state, followed with an address in which he dwelt on the many reasons for permanent friendship between Germany and the United States. "Die Wacht am Rhein" was sung by the entire audience. The exercises were then closed with an eloquent address by Commissioner-General Lewald who spoke in German, as Mr. Schurz and Baron von Sternberg had done.

At the conclusion of the exercises a reception was held in the German building and later a dinner was given by Commissioner-General Lewald at which an address, handsomely engrossed in a World's Fair album specially made for the occasion, was presented to him by, John Schroers on behalf of the German-Americans of the whole country.

In the evening a German kommers was held in Park View cottage on the grounds, covers being laid for nearly two thousand guests. Dr. George Richter

was toastmaster. The speakers responding to the regular toasts were Edward C. Kehr, Professor Otto Heller, Professor Peter Herzog, imperial Consul Rieloff, Dr. Max Hempel, Mr. Curt Thiersch and Dr. Carl Barck. Congressman Richard Bartholdt was unable to be present and his address was read by Dr. Hempel. Short addresses were delivered by Ambassador von Sternberg, Carl Schurz, Mayor Wells, Commissioner-General Lewald, Frederick W. Lehmann and President Francis, who were present as guests of honor.

Swedish Pavilion and Swedish Day:

The Swedish pavilion was dedicated Tuesday afternoon, May 9th. The architect of the building, Ferdinand Boberg, hoisted the Swedish flag and then formally presented the building to Dr. N. G. W. Lagerstedt, Sweden's commissioner-general at the Exposition, and to the country's other representatives present, stating that he hoped it would remind all Swedish-American visitors of their native land and that it would serve to strengthen the bond of friendship between the United States and Sweden.

Colonel, J. A. Ockerson, resident commissioner for Sweden, who had officially represented the Swedish government on the grounds during the pre-exposition period, accepted the building on behalf of Dr. Lagerstedt and his colleagues and extended a cordial welcome to all the visitors present.

Reverend C. J. Reinhard, of St. Louis, delivered an address in the Swedish language, thanking Architect Boberg for his services and assuring him that sweet memories of Sweden would be brought afresh to every Swedish-American visiting the building. He asked that the thanks of the Swedish residents of St. Louis be conveyed to King Oscar for the participation of Sweden in the Exposition and for the erection of the pavilion.

Among those present were F. L. Waage, Sweden's vice-consul in St. Louis; Charles W. Kohlsaatt, the Exposition's commissioner to Sweden; Axel Welin, Sweden's assistant commissioner; Ernst Lundblad, secretary of the commission; Miss M. Widegren and Messrs. Carl Lidman, A Schultzberg and Karl Stein of the Swedish commission; C. A. Ekstromer, chairman of the resident Swedish committee for the Exposition, and a large number of Swedish-Americans residing in St. Louis.

Swedish Day, June 24th, was celebrated by thousands of Swedish-Americans, every section of the United States being represented. Many residents of Sweden also took part in the celebration, which was successful in every particular. King Oscar cabled his congratulations to C. A. Ekstromer, chairman of the local committee, as follows:

I, the Queen and family, warmly interested in the national holiday, send all participating countrymen present on Swedish Day our heartfelt greetings.

Early in the afternoon a procession formed on the Plaza of Orleans near the Parade entrance and marched to Louisiana Way and thence to University Way, passing en route all of the large exhibit palaces in the main picture of the Exposition. At University Way the marching Swedes turned north and continued to Administration Way, passing the French, Mexican and British pavilions. Thousands of spectators lined these boulevards, as also Administration Way, viewing the parade and enthusiastically cheering the procession. The marching column

proceeded on past the Burns cottage and the Holland, Swedish, Chinese, Belgian and Austrian pavilions to the Administration building, in front of which it was reviewed by President Francis and a party of Swedish officials. The line then moved south, passing the Brazilian and Italian buildings to Olympian Way, and turning east proceeded to Festival Hall, greeted by the thousands of people gathered at the Nicaraguan, Siamese, Japanese and other foreign pavilions.

The exercises at Festival Hall were opened with an address of welcome in the Swedish language by C. A. Ekstromer, chairman of the committee on celebration. President Francis welcomed all visiting Swedes and Swedish Americans to the Exposition and congratulated the members of the Swedish commission on the erection of their national pavilion and the installation of the Swedish exhibits. Addresses by Dr. N. G. W. Lagerstedt, commissioner general for Sweden, and Professor J. S. Carsen, of the University of Minnesota, followed, after which a poem, "Sweden and America," was read by Dr. Ludwig Holmes, of Portland, Connecticut. The program included addresses by Gustav Andreen, president of the Augusta college at Rockford, Ill.; Gustav Gullberg, editor of the *Tidning*, of Stockholm, Sweden, and C. J. A. Erickson, of Boone, Iowa. The addresses were interspersed with music-songs by a chorus of fifty-four singers from Lund University and an organ solo by Professor Charles Galloway on the largest organ in the world. The exercises were attended by about 3000 men and women.

In the evening a concert was given in Music Hall by Lund University Chorus and John Forsale of the Royal Opera Company of Stockholm.

Among the prominent persons who participated in the celebration of Swedish Day were Dr. M. F. Pihlblad, president of Bethany College, Lindsborg, Kansas; J. E. Norling, publisher of the *Swedish Tribune* and *Forstlander*, Chicago; Dr., J. N. Enander, "Nestor of the Swedish press in America," Chicago; Reverend Dr., J. F. Secdoff, Rock Island, Illinois; Reverend Dr. A. W. Lindquest, Kansas City; Axel Oleson, publisher of the *Vestkusten*, San Francisco; O. A. Smith, of Minneapolis; Dr. E. J. Sjostrom, Rock island, Illinois; Reverend Dr. C. T. Reardon of St. Louis, and Reverend Dr. Julius Lincoln of Jamestown, Kew York.

Belgium's Pavilion:

A special feature of the opening of the Belgian pavilion, which took place Saturday, May 14th, was the entertainment of 300 little girls from the orphan asylums of St. Louis. The children were the special guests of Mme. Carlier, wife of the commissioner-general for Belgium. The forenoon was devoted to an inspection of some of the many exhibits in the building. The little guests were treated to a substantial luncheon in the Administration restaurant. Miss Jessie Olney, of the Baptist Orphans' Home, gave Mme. Carlier an immense bouquet of carnations and another little girl presented her with an address of thanks from the Mullanphy Orphans' Home, conducted by the Sisters of the Sacred Heart. The guests included twenty little colored girls from a home for negro orphans near the city. Among those who assisted in receiving and entertaining the little guests, were Baron Moncheur, the Belgian minister at Washington; the Misses Marie and Anna Schmidt and Miss M. Ravali, of Belgium; Miss J. Pierson and Miss Zelina Thompson, of St. Louis; Commissioner-General Jules Carlier; Cyr Van Overborgh, Belgium's commissioner for education; Emile Vauthier, commissioner for fine arts; Carlo Spruyt, secretary of the commission; John de Bronwer, G. de Kien and Julien Hillaert, members of the commission; P. Sain-

tenoy, architect of the pavilion; Eugene Fichet, Gustave Chartrain and Leo Bonet, the contractors; P. and Marcel Wielemans, Franz Vanderbist and Charles Smedt, from Belgium, and Mmes. McGuire, Pearson and Hirnbel, of St. Louis.

President Francis delivered a short address to the children after the luncheon and called for three cheers for Mme. earlier which were heartily given.

Canadian Pavilion:

The first reception in the Canadian pavilion was held Wednesday afternoon, May 18th. Nearly 100 newspaper men and women from Canada members of the Canadian Press Association and Quebec Press Association attended as guests of honor, and fully as many other residents of the Dominion were present. They were received by Wm. Hutchinson, Canada's commissioner-general; W. A. Burns, secretary of the commission; Sir Hugh Gilzean-Reid, president of the World's Press Parliament in session at the Exposition, and W. J. White, inspector of immigration for the Dominion of Canada.

An entertainment was given in the main reception room during which brief addresses were made by Sir Hugh Gilzean-Reid, of England; John A. Cooper, president of the Canadian Press Association, and E. J. B. Pense, Joseph P. Downey and Major Hugh Clark, of the Canadian Parliament. Mrs. Fenetta Sargent Haskell gave a recitation, and C. Price Green, of Toronto, sang "Soldiers of the King." A Canadian orchestra played Canadian and American airs at intervals during the afternoon.

Among the visitors were H. R. Charleton, J. D. McDonald and H. G. Elliot, officials of the Grand Trunk Line; W. K. McNaught, president of the Canadian industrial Exposition; John F. McKay, manager of the Toronto Daily Globe; J. S. Brierly, editor of the Montreal Daily Herald.

French Day and French Pavilion:

The French pavilion, a reproduction of the Grand Trianon, was formally opened Monday, May 16th. A reception was held from 4 to 6 o'clock in the afternoon and although stormy weather prevented the attendance of many invited guests fully 1,000 were present. They were received at the main entrance by Felix Lamy, secretary of the French commission; Paul Lascombes, secretary of the French minister of public instruction, and Marcel Estieu, of the French commission. Passing through the Salon des Arts to the drawing room, furnished in blue damask and elaborately decorated with allegorical paintings representing the friendly relations between France and the United States, the guests were received by Gaston Alberti, of the French commission, and by him introduced to Honorable Michel LaGrave, France's commissioner-general to the Exposition. M LaGrave, in turn, presented them to Honorable J. J. Jusserand, French ambassador at Washington, and Mrs. Jusserand, to Emile Dupont, president of the French section, to J. Guillemin, delegate of the minister of foreign affairs, to Jules Bouvard, assistant commissioner-general, and to Mrs. B. Callonge and Mr. and Mrs. Roger Bouvard, of Paris.

Sousa's band played the Marseillaise, Hail Columbia and other patriotic airs of France and the United States. Upon the arrival of a foreign commissioner the national air of his country was given. Colonel and Mrs. Charles M. Watson were

accordingly greeted with "God Save the King" and Dr. Theodor Lewald with "Die Wacht am Rhein." Among the guests were Baron Moncheur, Belgian minister at Washington; the President of the Exposition; Thomas H. Carter, president of the National Commission; Mrs. Daniel Manning, president of the Board of Lady Managers; Sir Hugh Gilzean-Reid, of England; Mayor and Mrs. Holla Wells, of St. Louis; Sir von Stibral, Austria's commissioner-general; Giovanni Branchi, Italy's commissioner-general, and official representatives of a number of foreign countries, as also state commissioners, exposition officials and Directors with their wives, and many other guests of note.

Each of the ladies received a bouquet of American beauty roses on entering the Sevres room. All the galleries and halls were decorated with roses, carnations and evergreens, and the marquee provided for the refreshments was artistically ornamented with garlands of ferns.

More than 4000 guests attended the reception given from 4 to 6 o'clock in the afternoon of July 14th in the French national pavilion to celebrate French Day at the Fair in commemoration of the fall of "La Bastille" in 1789.

All of the exercises were held outside the pavilion in the "Court d'Honneur." Jules Boeufve, resident commissioner of France, was the first speaker. He wished a hearty welcome to the Frenchmen in St. Louis, thanked the Americans who were in attendance, and spoke of the 50,000 Frenchmen, who from 1778 to 1783 helped the United States to win their independence. He thanked the sculptor, Leon Hermant, for having produced the beautiful statue of the French Republic, which was about to be unveiled. Three cheers for France and America followed the speech.

Alex. N. De lenil, as a director of the Exposition, of French descent, repounded. He said in part: "This beautiful Exposition would never have been possible without France. The French discovered this valley which was afterward colonized by the French."

The Boston band played "La Marseillaise," the French national hymn, and the statue of the French Republic, made by Leon Hermant, was unveiled. Charles Gauthier, the famous French tenor, sang "La Marseillaise," and all present joined in the chorus. Ernest Damour, president of one of the French groups, then gave to Marcel Estieu, attached the commission, the decoration in diamonds of the "Palmes Academiques." This jewel was provided by subscription of French exhibitors.

After the speaking the guests were received in the Salon de la Chambre de Commerce in the French pavilion by Jules Boeufve, resident commissioner, assisted by Marcel Estieu, attaché of the commission.

The Boston band played several French airs during the reception and light refreshments were served. The French pavilion was decorated with French and American flags.

Brazilian Building:

The formal opening of the Brazilian building took place on the evening of May 24th. The interior was decorated with roses and flags, the national colors of nearly every civilized nation being represented. A reception was held on the second floor, the President of the Exposition standing with Commissioner-General and Mrs. de Souza Aguiar and the Misses Aguiar at the head of the receiving line. They gave the guests a most cordial greeting and welcome after which the

visitors were presented in turn to Major J. da Cunha Pires, secretary of the Brazilian commission; Mrs. da Cunha Pires; Commissioner and Mrs. J. B. da Motta; Commissioner and Mrs. A. da Graca Couto; Commodores J.C. deCarvalho and A. Correa and J. A. dos Santos, members of the commission, with their wives; Commissioner A. J. da Costa Couto and the Misses da Costa Couto; Mr. and Mrs. A.O. dos Santos Pires; Mr. and Mrs. B. F. Ramon and Miss Ramon; Commissioner J. C. Alvis de Lima; Mr. and Mrs. E. Da Rocha Dias, and John Taylor Lewis, the Exposition's commissioner to Brazil.

An orchestra hidden from view played the national airs of the foreign countries represented at the reception. Luncheon was served in the grand reception hall from a circular table decorated with tropical plants. Among the guests were Ethan A. Hitchcock, secretary of the interior; Sir Hugh Gilzean-Ried, of England; Mayor Rolla Wells; Directors of the Exposition and their wives; Commissioners-General Gerald, Lewald, Watson, Szogyeny, Estrada and Nuncio, and a number of other foreign commissioners, and nearly all the members of the Board of Lady Managers.

British Pavilion:

The opening reception at the British pavilion took place Thursday afternoon, May 26th, King Edward's birthday. The first guests arrived promptly at 4 o'clock and from that hour until 6 p.m. visitors poured into the building. They were received at the main entrance by representatives of Colonel C. M. Watson, Great Britain's commissioner-general. Thence they were escorted to the reception room, a faithful reproduction of the banquet hall in Kensington Palace, where they were presented to Colonel and Mrs. Watson. Before entering this room each of the ladies was presented with a miniature British flag as a souvenir of the day and celebration.

Two bands of music, Sousa's and Well's, which had been provided by the exposition management for the reception, played alternately. Well's band beginning with "God Save the King." The antique furnishings of the Georgian and Elizabethan rooms in which the refreshments were served attracted special attention. These, as well as the other apartments open to the guests, were tastefully decorated with flowers and palms. The beautiful gardens surrounding the pavilion were much admired, the opinion of all being that they formed one of the prettiest spots on the exposition grounds.

Among the guests were the President and nearly all the exposition officials and Directors with their wives, as also the foreign and state commissioners, members of the National Commission and Board of Lady Managers and many other persons of prominence.

In reply to a cablegram from President Francis congratulating the Right Honorable Viscount Peel, chairman of the British royal commission, on the brilliant success of the reception at the British pavilion, the latter cabled:

Please accept warm appreciation of compliment to royal commission and its officers with fervent hope that mutual relations of the two nations may ever be based on respect and friendship.

Mexican Pavilion:

The formal opening of the Mexican pavilion, held Saturday afternoon, May 28th, was one of the most brilliant society functions of the Exposition. The reception took place on the second floor, the guests being received by Senor D. Albino R. Nuncio, Mexico's commissioner-general, Mrs. Nuncio, Major and Mrs. S. Garcia Cuellar, Mrs. Russell Stanhope, Miss Garibay and Miss S. Martinez. All of the thirty-two members of Mexico's World's Fair commission were present and assisted in making things pleasant for the guests, prominent among whom was Miss Alice Roosevelt, daughter of the President of the United States. The distinguished visitor arrived shortly after 4 o'clock with a party of friends. At 4:30 Thomas H. Carter, president of the National Commission, arrived accompanied by the other members of the commission. The President and Secretary Stevens of the Exposition called and paid their respects about 5 o'clock. Among the other guests were Mrs. Daniel Manning, president of the Board of Lady Managers; Colonel C. M. Watson, Great Britain's commissioner-general; Dr. Theodor Lewald, commissioner-general for Germany; Jules Boeufve, France's assistant commissioner-general; Carlo Spruyt, vice commissioner-general for Belgium; Stanley Bois, commissioner for Ceylon; G. D. Szogyeny, commissioner-general for Hungary; Herman Lawford, Egypt's commissioner; Senor Cincinnato da Costa, commissioner for Portugal, and other foreign and state commissioners.

Music was furnished by an orchestra and the rooms were profusely decorated with tropical plants. Refreshments, Mexican and American, were served on the balcony and on the lawn under wide awnings surrounding the building. More than 2500 guests attended the reception.

Pavilion of the Netherlands:

The pavilion of the Netherlands was officially opened with a reception on the afternoon of May 28th. The guests began to arrive at 2 o'clock, being received by Gerrit H. Ten Brock, Holland's commissioner-general, and Mrs. Ten Broek; C. L. Van Kesteren, architect of the building; J. A. Heringe, treasurer of the Dutch committee, and Miss Louise Sampimon, the hostess of the pavilion.

Miss Alice Roosevelt was one of the guests, calling about 4 o'clock. She was much interested in the Rembrandt room, which contained "The Night Watch," painted by the great Dutch master in 1648, and engravings of some of his other works. Her father's portrait was exhibited in one of the rooms. The visitors were also much interested in a chaise used by Queen Wilhelmina when a child, an old wardrobe and a cabinet with an exhibit of Delft ware and Saxony porcelain. Upon leaving the building Miss Roosevelt was presented with a beautiful bouquet of carnations by Commissioner-General Ten Broek.

The music for the reception, which closed about 5 o'clock, was furnished by Well's band. Among the guests were Baron Masanao Matsudaira, vicepresident of the Japanese commission; Commissioner-General Tegima and Commissioner Yamawaki, from Japan; Colonel Francisco de Sousa Aguiar, commissioner-general of Brazil; Senor Ernesto M. Nelson, of Argentina's commission; Emil S. Fischer, secretary of the Austrian commission; Senor A. Mesquita, from Portugal; Mr. and Mrs. M. J. Perk, of Holland; Martin Van Raalte, a distinguished Dutch journalist, and many others.

Japanese Pavilions and Japanese Day:

The Japanese imperial buildings and gardens were opened with a reception Wednesday afternoon, June 1st. The officers and Directors of the Exposition were present, many of them accompanied by ladies. The list of 2000 guests included also the foreign and state commissioners on the grounds, Major-General John C. Bates, U. S. A., and members of the National Commission, Board of Lady Managers, United States government board and the Philippine commission. Japanese and American flags floated above the main pavilion in which the reception took place, and the colors of both countries were conspicuous in the interior decorations of this and the other buildings. The gardens with their winding walks and rustic bridges, their flower beds and grassy hillsides, their little mountain stream and waterfall and lake, and their quaint-looking pagodas and teahouses, were suggestive of fairy land. Many of the plants were very rare and had been brought from Japan. Several dwarf trees dated back to the 18th century, one of them being 227 years old.

In two or three of the pavilions tea was served by geisha girls, and in one a native artist painted figures on fans which he gave away to the visitors. Each lady received also a bunch of American beauty roses. Refreshments were served in a temporary structure near the main pavilion.

The guest of honor was Miss Alice Roosevelt. Baron Kogoro Takahira, the Japanese imperial minister at Washington, was at the head of the receiving line with Masanao Matsudaira, vice-president of the Japanese commission, and Messrs. Hajima Ota, Haruki Yamawaki and Masanao Hanihara, non-resident members of the commission, Mr. Hanihara being secretary of the Japanese embassy at Washington. The resident members of the commission, Messrs. Hiromichi Shugio, Ushitaro Beppu and Naozo Kanzaki, were in the receiving line, as were the President of the Exposition, the members of the Exposition's Committee on Reception and Entertainment; Chairman F. D. Hirschberg, Vice-Chairman Rolla Wells, Judge Wilbur F. Boyle, and John D. Davie, Thomas H. McKittrick, Dan C. Nugent and John Schroers, with Mesdames Davis, McKittrick, Nugent, Schroers, Smith, Sugawa and Diaz-Albertini. The guests were announced by Lieutenant C. Sidney Haight, of the United States Army, military aide to President Francis, and Ricardo Diaz-Albertini, secretary of the Committee on Reception and Entertainment.

The 50th anniversary of the Mikado, Mutsuhito, was celebrated Thursday, November 3d. Religious services were held in the morning in the gardens. The national hymn of Japan was sung by the 400 Japanese present. An address was delivered by Honorable Seiichi Tegima, Japan's commissioner-general at the Exposition.

Japanese bombs and daylight fireworks formed an attractive feature of the celebration, the exhibition being continued until evening. Flags and flowers were conspicuous in and about the pavilions. Thousands of chrysanthemums grown in the gardens were given away to the ladies and every guest present received one or more interesting curios from the Japanese bazaars on the grounds. Refreshments, both Japanese and American, were served in a booth specially erected for the purpose.

Among the guests were many exposition officials headed by the President,

the foreign and state commissioners; members of the National Commission and Board of Lady Managers; Major-General John C. Bates and his military staff and Colonel Webb Hayes, from Ohio, a son of a former President of the United States. They were received by Commissioner-General Tegima and other members of the Japanese commission, and also by members of the Exposition's committees on Ceremonies and on Reception and Entertainment.

Austrian Pavilion:

The Austrian pavilion was opened with a reception June 2d. The guests began to arrive shortly after 4 p.m. They were received by Chevalier Adalbert von Stibral, Austria's commissioner-general, and Mrs. Ashley D. Scott of St. Louis. A marble bust of Emperor Franz Joseph in the reception hall was much admired, as was also a replica of a marble bust of Empress Elizabeth in an adjoining room.

Unlike the national pavilions of most of the foreign countries represented at the Exposition, the Austrian building was filled with exhibits, many of them rare works of art contributed by various art societies of Bohemia, Poland, Austria, Transylvania and other sections of the Austrian Empire, including, of course, Vienna, the great art center of the country. Every one of the thirteen rooms in the building was crowded with visitors until the hour of closing, and many remained to congratulate Commissioner-General von Stibral on the beauties of the building-the architecture, the furnishings, and the exhibits-and the great success of the social function on the opening day.

The guests were presented by Emil S. Fischer, secretary of the Austrian commission. After the presentation each of the ladies received a bouquet of pretty flowers. Mrs. Alice Roosevelt, daughter of President Roosevelt, was specially favored in this respect, Mr. von Stibral presenting her with a bouquet much larger and handsomer than the others.

Refreshments were served in the southern balcony.

The guests included nearly all of the exposition commissioners on the grounds-foreign, national, state, Philippine and the Exposition's commissioners to foreign countries-other exposition officials, Directors and department chiefs, the Board of Lady Managers and distinguished visitors.

India's Pavilion:

A reception was given to the press in the East India pavilion Friday afternoon, June 2nd, and on the following day the building was thrown open to the public. The visitors were received by Commissioner-General Blechynden and F. C. Williams, honorary assistant commissioner. The pavilion, a reproduction of the famous mosque of Itmad-ul-Dowla at Agra, India, was much admired, as were the interior decorations and exhibits. Rising from the center of the court was a Jain temple of teakwood 33 feet high and 20 feet across at the base, being a copy of a white marble temple eight times as large at Palitana, Central India. The reproduction represented two years' work of sixty-five artists and was made expressly for the Louisiana Purchase Exposition. Tea from India was served by natives in oriental dress.

Ceylon Pavilion:

The 6th of June was celebrated by the Ceylon commissioners with a reception in their pretty pavilion, the building being decorated for the occasion. Commissioner-General Stanley Bois stood at the head of the receiving line with Mrs. Bois, the guests being presented to them and then to Mrs. Russell Stanhope and Mrs. P. E. Pieris. Tea with ices, cakes and other refreshments were served on the balconies surrounding the building and on the grass plot on the west side by Singhalese waiters in their native dress, Peter de Abrew having charge of this feature of the function.

The exhibit rooms both upstairs and down were thronged with ladies and gentlemen until the close of the reception, some of the displays, representing scenes and customs in Ceylon, attracting a great deal of attention. Assistant Commissioners Eliot, Pieris and Stanhope, Honorable J. Ferguson and F. C. Roles, H. Van Cuylenburg and D. Obeyesekeri, all from Ceylon except Mr. Stanhope, and all officially connected with that country's display at the Exposition, assisted in receiving and entertaining the guests.

Danish Day:

Danish Day at the Exposition was June 6th, the anniversary of the granting of a constitution to the people of Denmark. Representative Danes from many sections of the United States attended the Exposition that day, Philadelphia and Chicago having the largest delegations. Denmark's most important display of exhibits was in the Varied industries building, and it was there that the sons and daughters of Denmark and their American kinsmen lingered longest on their sight-seeing round on Danish Day. The exhibitors were assisted in receiving the visitors by Commissioner-General William Arup and other members of the commission: Charles Ambt, director-general of the Danish State Railway; N. Anderson, councilor of state; Philip Schon, councilor of state; Admiral A. du Plessis de Richelieu and Professor Arnold Krog. Among the exhibits that attracted much attention were silver spoons and other silverware made in the sixteenth and seventeenth centuries, models of Danish ferryboats and ocean steamers and a fine display from the Royal Copenhagen porcelain works.

An orchestra played in the Danish section most of the day and Danish music was rendered at all the band concerts on the grounds in the afternoon and evening. The arrangements for the day's observance were in charge of the Danish Brotherhood of America.

Italian Pavilion and Italian Day:

The Italian pavilion was opened June 6th with an official reception. The guests began to arrive at 4 p. m., and for the next two hours the building was thronged with guests representing the Italian and other foreign governments, the exposition management, the National Commission, Board of Lady Managers, United States government board, Philippine commission, the many state commissions, the various departments of the Exposition and St. Louis society.

A canopy covered the walk from the ionic columns fronting the pavilion to the main entrance, where the guests were announced by a member of the Italian commission. In the receiving party were Count Machhi di Cellere, counselor of embassy and *charge d'affaires* at Washington; Giovanni Branchi, commissioner-general for Italy; Count and Countess Antonio Ladislao Rozwadowski; Chevalier Vittorio Zeggio, member of the Italian commission, and Mrs. Zeggio; Dr. Tullio Giordana, secretary of the commission, and Mrs. Giordana; Gustavo Tosti, Italian vice-consul in New York City; Prince and Princess Engolitcheff, Mrs. Fernando Jones and Mrs. Theodore Robinson, from Chicago; Signor Domenico del Corriere, of Milan, Italy; Dr. Marco Testolini, of Venice; Dr. Soleri, of Turin; and Messrs. Dante Appiani and Ferruccio Guindani, of the Italian press.

At the opening of the reception, which lasted from 4 to 6 o'clock, the Italian colors were unfurled from two gilded flagstuffs in front of the building. The Colorado Italian orchestra played inside the pavilion and Professor Conterno's Italian band outside in the garden. As the official representatives of the different foreign governments arrived, they were greeted with the national airs of their respective countries. Italian music was a favorite with the visitors, and next in popularity came Hail Columbia, the Star Spangled Banner and other American airs.

Among the many distinguished visitors was Count Henry Prevost de Brebriere. The ladies were presented, each, with a bouquet of flowers and a box of Italian bonbons tied with red, green and white ribbon, the colors of Italy.

October 12, 1904, the 412th anniversary of the discovery of America by Christopher Columbus, was Italian Day at the World's Fair. The Italian pavilion was decorated outside with the national colors of Italy and the United States, and on the walls inside hung banners picturing the history of the Roman Empire from the earliest days to the discovery of America.

One of the main features of the celebration was a parade through the exposition grounds to the Italian pavilion and back to St. Louis Plaza where Baron des Planches, Italian ambassador at Washington, presented a very handsome Italian flag which had been carried in the procession by a guard of honor composed of twelve Italian marines, to Mayor Wells for the city of St. Louis. The Mayor gracefully accepted the flag in the name of the city and extended a cordial greeting to Ambassador and Mrs. des Planches and all of the visiting Italians. Signor M. Salvini, the Italian sculptor who had been selected to act as "President of the Day," delivered an address in which he expressed the hope that the time would come when the 12th of October would be celebrated regularly in the United States as a public holiday. After addresses by the President of the Exposition and Commissioner-General Giovanni Branchi, the latter read the following cablegram from Rome, which had just been received by Signor Angelo Pavia, president of the royal commission, from Signor Rava, the Italian minister of commerce.

Present to the great friendly nation, whose name reminds us of the greatest achievement of our country, the best wishes of the Italian government today when Italy celebrates its participation in the great international Exposition at St. Louis.

The exercises on St. Louis Plaza were attended by President G. Zucca and eighty members of the Italian chamber of commerce in New York City; Signor

Salsoiraghi, of Milan, Italy; Professor Attilio Brunialti, a member of the Italian parliament; G. Ginocchio, Italy's consular representative in St. Louis; A. Cottoni, of the local committee of arrangements; Professor A. Barthe, member of the International Jury of Awards; Professor Biagi, member of the superior jury; Colonel I. Briaco and Lieutenant Fisher, naval attaches at Washington; Vittorio Zeggio and Guido Pantaleoni, members of the Italian commission; and Alberto Alfani, Trilio Giordana, Cesare Della Chiesa and Jerome Zeggio, secretaries of the commission.

A banquet in the afternoon at the International Cafe on the Pike was attended by 1000 guests, most of them Italians, Signor Pavia acting as toastmaster. An illustrated lecture by Professor Brunialti, of Rome, on "Italian Monuments," filled Festival Hall between 6 and 7 p.m. In the evening the celebration of Italian Day was fittingly closed with a water carnival on the lagoons, the distinguished guests being taken through the waterways in Venetian gondolas and launches to the strains of Italian music.

Siamese Pavilion:

The Siamese pavilion was formally dedicated, June 16th. Professor James H. Gore, commissioner-general for Siam, presented the golden key of the building to the President of the Exposition and assured him of the great interest taken by the King and Crown Prince of Siam in the Louisiana Purchase Exposition. President Francis accepted the key and the building on behalf of the exposition management. He spoke of the scholarly attainments of King Chulalongkora and of the visit of the Crown Prince to St. Louis in November, 1902. He hoped and predicted that the friendly relations between the governments of Siam and the United States would ever continue.

Following the presentation, which took place on the steps leading to the main entrance, Mrs. Gore, wife of the commissioner-general, led the way into the building and an inspection of the furnishings and of the historic display within was made. A collection of ancient weapons, musical instruments and models of temples from the royal museum of Bangkok was much admired. Portraits of the King and Queen of Siam and Crown Prince Somdotch Chowfa Maha Vagiravudh were given places of honor.

Cuban Pavilion:

The Cuban pavilion was opened with a reception Monday evening, June 28th. The interior of the building was decorated with Cuban and American flags for the occasion. In the center of the reception room stood an immense pyramid of palms and at the sides were tall vases filled with American beauty roses. Green vines and pink and white carnations added to the charm of the decorations. Weil's band played on one of the piazzas during the reception and the luncheon which followed.

In the receiving party were Senor D. Gonzalo de Quesada, Cuban minister to the United States, and Mrs. de Quesada; Commissioner-General and Mrs. Estaban Duque Estrada; Edwards Morales de los Rios, commissioner of education for Cuba, and Mrs. de los Rios; Sixto Lopez Miranda, technical commissioner of education for Cuba, and Mrs. Miranda; Dr. B. Portiundo, Cuban consul at St.

Louis, and Mrs. Portiundo; Dr. J. J. Luis, Cuban commissioner of social economy, and Mrs. Luis; and Antonio Carrillo, secretary of the Cuban commission for the World's Fair.

Among the one thousand guests who attended the reception were the President and most of the exposition officers and Directors, many being accompanied by their wives; nearly every foreign commissioner at the Exposition; members of the National Commission and of the Board of Lady Managers; Mayor Rolla Wells, and the leading members of the Cuban colony in the city.

Cuba's national day, October 10th, was celebrated with a public reception. A stream of visitors passed through the pavilion from early in the forenoon until late at night. Light refreshments were served. In the decorations, Cuban, American and exposition flags and southern smilax were used with admirable effect.

Argentine Pavilion:

The Argentine pavilion was opened Saturday afternoon, July 9th, with an informal reception which was attended by the President and Directors of the Exposition, the foreign and state commissioners and many other officials. The guests included Argentine's entire colony in St. Louis and a large number of other South Americans. Mexico and the Central American countries were well represented. The visitors were received by Commissioner General Jose V. Fernandez; Commissioners Eduardo Schaffino, Enrique M. Nelson, Damian Lan, Horacio Anasagasti, Guillermo A. Puente, Ernesto Nelson, Luis A. Sauze and Jose d'Olivares; and Assistant Commissioners Joaquin Granel, Moine Carranza, Augustin de Irondo, Alenjandro Freyre, and Vicente Casares, Jr.

Commissioner Olivares, who had superintended the construction of the building, and also that of Argentina's booths in the various exhibit palaces, delivered the keys of the pavilion to the commissioner-general and formally turned over the building and the booths to him in a short address in Spanish. Dr. Fernandez accepted the work with a few remarks in the same language, complimenting his colleagues and the Argentine exhibitors on the excellence of their display at the Exposition. A banquet followed at the restaurant connected with the German building.

Nicaraguan Pavilion:

The Nicaraguan pavilion was opened with a reception Wednesday afternoon, July 11th. The guests were met at the door by Colonel Jose Mereno Ocon, of Nicaragua, who presented them in turn to Dr. L. F. Corea, Nicaragua's minister at Washington; Dr. Leopold Ramirez Mairena, president of the Nicaragua commission to the Exposition; Commissioners Alexander Bermudez and Juan Jose Zalaya; Honorary Commissioners L. D. Kingidand and W. H. Thomson and Secretary Paul Guerard. Luncheon was served. Every lady guest was presented with a bouquet of roses and carnations. Well's band played in the gardens during the afternoon.

Among the guest were the President and other exposition officials; many of the foreign commissioners, including all of those representing Spanish American countries and several members of the Philippine commission.

The many interesting exhibits from Nicaragua were tastefully arranged in the several rooms and attracted a great deal of attention. There were 1000 specimens of different kinds of wood grown in that country and over 400 samples of minerals from Nicaraguan mines. Some 600 dried plants were exhibited and many other vegetable products, as well as jewelry, furniture, tapestry, hats, shoes and other manufactured articles. A portrait of General Zelaya, President of Nicaragua, was given a place of honor in one of the rooms.

Hungarian Day:

Hungarian Day at the World's Fair, July 12th, was celebrated by the opening of Hungary's section in the Varied industries building. Commissioner General George de Szogyeny gave a reception which was attended by exposition officials, members of the National Commission, foreign and state commissioners, members of the Board of Lady Managers, distinguished visitors at the Fair and many others. In the receiving line were Mr. and Mrs. Szogyeny, Professor Paul Horti, member of Hungary's national committee of fine arts, with Mrs. Horti; Judge R. E. Rombauer, member of the Hungarian commission, and Mrs. Rombauer; and Honorable L. de Hegyeshalny, director of the ministry of commerce at Budapest. Over the main entrance was a painting by Kriesch representing the peasants of different Hungarian provinces going to church. A bust of Emperor Franz Josef decorated one of the walls. In the central hall were exhibited mosaic work by Rothniksa, rare jewels by Bachrach of Budapest, and chinaware by Fischer of Herend.

Four furnished rooms were shown: A dining room designed by Professor Paul Horti, a parlor with a painting by E. F. Laszio, a woman's room with old-fashioned Hungarian furnishings, and a nursery with modern furniture in blue.

The lady guests received handsome bouquets. All were served with refreshments. A feature of the reception was a concert by Hungarian musicians.

Guatemala's Pavilion:

Guatemala's pavilion was to have been opened formally early in July, but the Guatemalan minister at Washington could not leave the capital at that time. After several postponements the ceremony took place on Monday, August 8th. The building was crowded with visitors all day, the exposition management being represented by its President, Secretary Stevens and other officers and department chiefs. Many foreign and state commissioners called and nearly all of the Central and South Americans in the city paid their respects to Carlos F. Irigoyen and Manuel M. Jiron, of the Guatemalan commission. Dr. Joaquim Yela, the head of the commission, could not be present, being detained in Washington by his official duties as *charge d'affaires* of the Guatemalan legation.

L. D. Kingsland, Guatemala's consul in St. Louis, assisted in receiving and entertaining the guests. Guatemalan coffee was served with other refreshments by native Guatemalans in true Guatemalan style. The natural resources of the country were splendidly represented by a display of woods, birds, liquors, fruits, silk, soaps, perfumes, rice, cotton and other products. A portrait of President Roosevelt in burnt wood was much admired.

Swiss Day:

Swiss Day, August 19th, was celebrated at Festival Hall in the afternoon and at the Tyrolean Alps in the evening. The Swiss societies of New York, Boston, Philadelphia and other cities sent delegates and many other sections of the country were represented.

Martin Scherer, honorary member of the Gruetli Verein and chairman of the local committee of arrangements, presided at Festival Hall, the exercises being opened with an address of welcome by the President of the Exposition, who spoke of the friendly relations between Switzerland and the United States and of the sterling qualities of the Swiss people who had become citizens of this country. In conclusion he welcomed the visitor most cordially to the exposition grounds and expressed the wish that they would come again in the fall and have a second grand reunion and celebration.

A chorus of Swiss singers from New York, Louisville, Milwaukee and Dallas, Texas, joined the Schweizer Maennerchor of St. Louis in singing Zwyssig's "Swiss Psalm." Several short addresses were delivered, interspersed with songs and tableaux. President Scherer spoke in English; Mr. Emil Hirt, of New York, in German; Professor Arnold Battaglini in French; Signor Severn Baffa in Italian; and Mr. Max Risch in Roman, the name given the language of the people in one of the southern cantons of Switzerland - a language that is more like the Latin than even the Italian or Romanian.

The exercises concluded with a tableau representing Columbia and Helvetia, the chorus and audience singing the Swiss national anthem as the picture was presented.

All day long the Swiss chalet in the court of the palace of Varied industries, was thronged with the sons and daughters of Switzerland, to whom there were no more precious or interesting exhibits or souvenirs on the grounds than those displayed in the pretty Alpine building.

In the evening a banquet was given in the Ritter Saal of the Tyrolean Alps, on the Pike. About two hundred guests were present, including representatives of the leading Swiss societies of the United States. Martin Scherer was toastmaster and Albert Peter, president of the Gruetli Verein, and Joseph, J. Albrecht assisted in receiving and placing the guests. The speakers at the dinner were Emil Hirt, of New York City; Professor Arnold Battaglini and Paul Breiting, both of whom spoke in French; Severn Baffa, who represented the Italian canton Tessin; W. A. Kelsoe, who represented the management of the Exposition; Johannes Bodemann, of Chicago; Charles F. Vogel, St. Louis; August Hug, Kansas City; Arnold Doehle, New York City; Herman Gehrig, Detroit; Chas. Meier, Omaha; Arnold Saxer, Centralia, Illinois; and Philip Morlang, Charles Thoman, Joseph Sidler, A. Ryser and F. Eichenberger, St. Louis. The Nord Amerikanischer Gruetlibund, the leading Swiss organization of the country, was represented by its four officers: President Fred Blatter, Treasurer John J. Meir, Recording Secretary Dieth Naegli, and Financial Secretary John Grob.

Bulgaria's Day:

The Bulgarian section in the palace of Varied Industries building was formally opened Wednesday afternoon, August 31st. Commissioner-General and Mrs. P. M. Mattheeff received the guests, Mrs. Mattheeff presenting each of the ladies with a pretty chatelaine bottle filled with attar of roses from Bulgaria. Refreshments were served and toasts drunk to the Prince of Bulgaria, the President of the Exposition, the Bulgarian commission and the American press. Short addresses were made by Commissioner-General Mattheeff, Dr. Theodor Lewald, Germany's commissioner-general, and President Francis. The latter said he would cable his thanks to the Prince of Bulgaria for the fine display made by his country at the Exposition.

Well's band played at intervals, one of the number being Bulgaria's national air, Shoumi Maritza, which was heard for the first time by many of the visitors. Rose perfumed water flowed from the handsome allegorical fountain and the section was tastefully decorated with American beauty roses for the occasion. Assistant Commissioners D. N. Stancioff and S. Schterbanoff, together with Mr. Dobervich from Bulgaria, assisted in receiving the guests, among whom were many of the exposition officials, members of the National Commission and Board of Lady Managers, foreign and state commissioners and prominent visitors.

CHAPTER X

MILITARY FEATURES

Barracks and Camps—Daily Parades on the Plaza—Visit of the West Pointers—Famous Organization from Connecticut—Fusiliers from Canada—United States Service Well Represented—Miss Helen Gould's Reception—The Army Bands.

THE Committee on Ceremonies had jurisdiction over visiting military organizations and the provisions for them. Under the committee a military department was organized. United States Army officers were detailed for service in connection with the department. The committee supervised the expenditure of large sums of money to provide barracks and camps for visiting troops and, so far as practicable, contracts to provision them at minimum rates. Three large two-story barracks were built and equipped, and two encampments of wall-tents were established. One of these encampments known as the Model Camp was near the Administration building and the other known as the West Point Camp was on the Plateau of States. All of these camps and barracks were provided with shower-baths, facilities for washing, sanitary rears, officers' quarters, drainage and ice-water tanks. The plumbing and water connections for the barracks and Model Camp alone cost \$14,720.00. All were within two minutes' walk of Intramural Railroad stations and convenient to messing halls.

As a further concession to these military and semi-military organizations each member in uniform was admitted to the grounds upon the payment of one admission fee, fifty cents, after which passes were supplied during the company's stay.

It will be seen that early provisions were made for considerable bodies of men. On April 4th, 1904, Colonel Culp reported: "We are absolutely filled for June, July and August." On the 2nd of September following, Lieutenant Haight, in a letter to the secretary, wrote: "I beg leave to state that there will be over 4,000 men in the West Point Camp, the Model Camp, the camp west of the dormitories and in Convention Hall."

The duty required of the visiting military companies was light. There was a call to inspection and guard mount at 9 o'clock in the morning; the guard was expected to protect the camp from fire and pilfering. If the company had a band, it was stipulated that it should play in such parades and upon such occasions as the President required. The University Court and the Plaza of St. Louis were reserved for exhibition drills and maneuvers. This plaza was a clear space of 400 feet x 750 feet, the most accessible point in the whole Exposition. In one of his reports Colonel Culp stated:

This grand plaza of the Exposition is as level as the floor of a ballroom. It is paved, not with the glaring asphalt or brick, but with a hard-rolled, tightly-packed surface of

red-burnt clay, known to railroad men as "gumbo." The resurfacing has the resilience of turf, absorbs water freely without forming mud, and stands a considerable amount of wear without forming dust. As it absorbs water it may be cooled by sprinkling. On either side of the plaza are double rows of maple trees, forming shade, arcaded avenues in which the spectators may stand or sit comfortably - to observe the evolutions.

This description by the secretary of the Committee on Ceremonies was not overdrawn. State after state sent its national guard to the Exposition and the soldiers maneuvered on the Plaza of St. Louis. Companies of college students and cadets from the military academies came and during their stay put up their best drills on the plaza, giving way in turn to other companies and organizations. The uniformed ranks of secret and beneficiary societies sent large delegations to hold public reviews on this choice piece of ground reserved in the very center of the visiting exposition population. Even churches sent military companies. Swift's Mission Battalion, attached to a Presbyterian church in Allegheny City, Pennsylvania, came, officers and men, 145 strong with a band of twenty pieces. The Columbus Rifles of Ohio and the Juvenile Fusiliers of the Royal League of Chicago met on the plaza. The Devlin Zouaves from the North, the Frazier Light Guards from the South, state troops from California and college troops from many institutions marched over the same ground, giving quality, color and variety to these entertaining spectacles. All summer long as the hour drew near for these daily parades and demonstrations the crowds around the plaza grew larger and larger, the people became more keenly eager to improve these rare opportunities.

The Philippine Scouts and Constabulary, including their large military bands, mustered a strength of 700 men. These troops were quartered on the Philippine reservation and were not under the jurisdiction of the Committee on Ceremonies, but their services were so freely given upon state days and other special occasions that it is a pleasure to acknowledge their value and soldierly conduct. By their neat appearance and military address these Philippine battalions always excited admiring interest.

After a ten days' stay the West Point Cadets took their departure June 9, 1904. The battalion of the National Military Academy, including the band and a mounted squad, numbered 575 men. It gave an exhibition drill daily and participated in all of the parades which occurred during its visit. In gray, full-dress coats, white duck trousers, white belts, shakos and pompons, the West Pointers never failed to meet the enthusiastic approval of spectators. The precision of the movements was a revelation to non-military people. Several receptions were given in honor of these young embryo officers of the army and when they departed it was with added luster to the fame of the United States Military Academy.

As evidence that the visiting military companies appreciated the Exposition and its opportunities it may be stated that some of them made a return trip. In May the Culver Military Academy sent 250 cadets, including officers and men; in August it again sent 150 officers and men from its Naval School.

Many of the state days were celebrated with military honors. One of the most pleasant surprises in this connection came from Connecticut. Governor Chamberlain and party were escorted by three commands-the Governor's First and Second Foot Guards and the Governor's Horse Guards.

The Foot Guards attended in full force, 125 in each command. There were fifty of the Horse Guards, bringing the strength of the Connecticut troops to 300.

The First and Second Guards were from Hartford and New Haven respectively. The first command was organized in 1771, the second in 1775 and the Governor's Horse Guards in 1778. The Horse Guards, organized after the Revolutionary War, are uniformed in blue coats and white riding breeches. The uniforms of the Foot Guards are British in color and pattern. One command has the uniform of the Royal Grenadiers and the other that of the Coleraine Guards of Ireland. These uniforms differ only in detail. Both commands wear the scarlet cutaway coat with white bars, facings, chevrons and epaulets. Both wear the regulation waistcoat and leggings. But one command wears buff-colored breeches while the other wears white. One command wears a head-dress of prodigious and shaggy bearskin while the other wears the busby somewhat less prodigious and less shaggy. It is a disputed question which of these uniforms comes nearer the old English standard. Four generations of Connecticut militiamen have failed to settle the question and the contest between the busby and the bear-skin goes on as keenly as ever. These suits are made of the best of cloth, carefully fitted, and richly decorated. Many of the public men in the State of Connecticut have been members of these military organizations and there is always a long waiting list to fill vacancies. Connecticut celebrated on the 13th of October, a beautiful day. It is needless to comment further on the novelty of having representation descended from this ancient and honorable branch of the English service, coming as it did from one of the New England states-it was a feature no less edifying than interesting.

From September 19th to September 29th the Essex Fusiliers of Windsor, Canada, encamped on the grounds. These troops also wore the red-coat uniform of the British army. They were robust men and coming 400 strong presented an impressive appearance. They brought two bands of tremendous wind power whose favorite piece "God Save the King" could be heard when played en masse at the most distant part of the grounds. Each afternoon they gave an interesting drill which they called "Trooping the Colors."

Illinois celebrated two days, September 21st and 22d. Perhaps this state furnished the largest number of the national guard. Certain it is that the Illinois regiments acquitted themselves with distinction.

Perhaps all of these visiting citizen soldiers did not comply literally with the regulations. But throughout the entire season not a single case of immorality or insubordination was referred to the exposition authorities.

This narrative does not deal primarily with the federal troops, yet it would be incomplete did it not make some allusion to their service and some acknowledgment of the great value of same to the Exposition. A loyal people takes pride in its soldiers; the crowd will go where the soldiers are. An official writer giving an account of the Dedication ceremonies makes this statement:

The military parade of April 30, 1903, will be long remembered by the multitude who watched the battalions, squadrons and batteries as they marched by with brilliant cavalcades of staff officers in splendid uniforms breaking the monotony of the long columns at intervals. Few who saw it had witnessed such a spectacle before or will probably ever see the like again. Estimates of the crowds vary from 300,000 to 400,000. The military in the procession numbered about 12,000 officers and men-4,000 regulars and 8,000 state troops. The grand marshal of this ceremony was Major-General Henry C. Corbin, U. S. A.

Other important days when commands of the United States Army aided in the parades were:

Opening day, April 29th	Philippine day, August 13th
Liberty Bell day, June 9th	St. Louis day, September 15th
Memorial Day	Missouri day, October 11th
Independence Day	President's day, November 27th
Francis day, December 1st	

Major-General John C. Bates, commander of the northern division U. S. Army, and staff, assisted in nearly all these military functions. The cavalry at Jefferson Barracks was a valuable adjunct to the work of the Committee on Ceremonies.

Major Richard W. Johnson, surgeon U.S. Army, with thirty men detached from the hospital corps, maintained a model field hospital on the grounds, giving daily ambulance and litter drills, with applications of first-aid dressings of gun-shot wounds.

Major J. E. Mahoney, U. S. Marine Corps, commanded a battalion of 250 marines, giving a drill and dress parade on the Plaza of St. Louis every day the grounds were open. This marine corps and hospital corps occupied special camps near the Government building. The drills of the marines were among the most popular of the plaza features.

Captain Alexander Campbell, 119th Company Sea-Coast Artillery, with a detail of picked men, gave exhibitions of United States heavy gun practice, demonstrating with a disappearing battery in the forenoon and using mortars, siege and rapid-fire guns in the afternoon.

Captain C. H. McLellan, of the U. S. Revenue Cutter Service, installed a U. S. Life-Saving station and equipped it with complete apparatus. This station was left in charge of Captain H. J. Cleary and a crew of eleven men who daily exemplified the work of a U. S. Life-Saving station.

A large lake was excavated. In the center was a tall mast, representing a wrecked ship. The building which housed the crew contained the life line cannon, the surf wagon, the boat, and the other apparatus of a sea coast station. As the hour of the daily exhibition approached thousands of spectators assembled on the long slope between Life-Saving Lake and the palace of Agriculture. The crew ran out the wagon and the boat in response to an alarm. The line was shot out over the water falling upon the cross-arm of the mast. The boat was manned and rowed to the mast. Life savers climbed to the cross-arm, fastened the cable, attached the breeches buoy and sent the shipwrecked ashore. Then followed the overturning and righting of the boat, rescues from drowning and illustrations of other thrilling experiences in lifesaving on the coast.

In addition to these branches of the service a signal corps gave frequent exhibitions of its skill and accuracy in handling field dispatches. The commandant of the Jefferson guard, all of his assistants and subordinate officers, were detailed to this duty by the war department. Army and Navy engineers rendered valuable assistance to Director of Works Taylor and in the department of sanitation. Army officers were detailed for special work in the Division of Exploita-

tion. Company I, 6th infantry, U. S. Army, did guard duty in the department of Mines and Metallurgy. A detachment of 400 men from the 16th infantry, U. S. Army, under command of Colonel Price, arrived on the grounds November 15th and remained two months, doing patrol duty and guarding the property of the Exposition.

Other military features appealed to the ear as well as to the eye. The band concerts were as pleasing as the spectacles. Among the bands which played at the Exposition for periods running from two weeks to two months were the Marine Corps band; the Marine Battalion band; the 1st infantry band; the 1st Cavalry band; the 2nd infantry band; the 6th infantry band; the 16th infantry band; the 24th infantry (colored) band; the 26th infantry band; the two bands of native Filipinos. The 8th Cavalry (Jefferson Barracks) band made occasional visits to the Exposition. Most of these bands gave two concerts daily.

What is here written in relation to the music is pertinent to the work of the military department under the Committee on Ceremonies, but it must be regarded as supplemental and subsidiary and in no wise trenching on the field of the bureau of music. The value of these great military pageants as elements of entertainment and of instruction cannot be over-estimated.

Inquiry fails to reveal another occasion either in this country or abroad at which the music of military organizations presented a variety so rich and rose to a standard so high as at the Louisiana Purchase Exposition. The opportunity to hear this music was prolonged and affluent. For six weeks the best military bands of Paris, London and Berlin gave two public concerts daily. The Garde Republicaine carried eighty-five instruments. The members dressed in the French blue-black and wore black chapeaux. A short sword was the only decoration. The director, M. Pares, never responded to an encore or yielded to the demand for rag-time airs, yet his audiences grew larger and larger. One competent critic said that he never heard the Marseillaise until he listened to the Garde Republicaine. Another, perhaps more critical than patriotic, said he had never heard the Star Spangled Banner until these Frenchmen played it - such was their skill of arrangement and power of expression. The Grenadier Guards carried fifty-five instruments and dressed in the ancient service-uniform of the Royal Grenadiers. They were led by A. Williams and by many regarded the peers of the Paris band. The Berlin band was semi-military only and carried about forty instruments. Herr Franz von Blon, a well-known composer and conductor, was its leader. A study of the programs of the Berlin band will show its great familiarity with the folk-songs of the German people as well as its mastery of the highest German and Italian compositions. The music of the Mexican Artillery band was conducted by Captain Ricardo Pacheco, and so popular were the concerts that the stay of the band was lengthened until almost the close of the Exposition. The band wore the conventional Mexican blue with broad maroon stripe, shako and pompon. "The Kilties," a Canadian organization, under the direction of Captain William Johnstone, gave several concerts. The members of this band were Highlanders and wore the Highland dress complete. Their sword-dances, flings, shillala pieces and vocal choruses accompanied the instruments and never failed of that eager applause which goes with the highest enjoyment.

Thirty Italian marines were on duty at the Exposition guarding the exhibits of their countrymen. Their dress was the blue blouse and white duck trousers

universal with sailors. A company of Argentine marines landed from one of their training ships and spent several days at the Fair.

It remains to speak of an incident as pleasant as it was unexpected. The military division of the Y.M.C.A. pitched a large tent near the Model Camp and fitted it for a reading room. In this tent were current numbers of the best magazines, daily newspapers, and recent issues of the Army and Navy Journal. Tables, papers, pens and ink were kept for those who desired to write. All soldiers were welcome.

Miss Helen Gould was a patroness of the tent and gave it substantial aid. One evening in October, accompanied by Joseph Ramsey, Jr., president of the Wabash railroad, she gave a reception in this tent. Addresses were made by Major W. H. Johnston and other soldiers. Then came the reception - Philippine Scouts, Constabulary, Jefferson guards, marines, signal service men, musicians, U. S. Army officers and men, National Guard officers and men, young Indians from the Indian school, which was nearby; dusky shoemakers, wagonmakers, blacksmiths and Indian girls, who had learned to read, sing, cook, wash and sew, passed down the line and cordially shook the hand of her who had been a friend to the American soldier and who, as founder of the Robin's Nest, is in the front rank of the most highly respected women in the United States today. Even the old Indians standing back and looking on seemed pleased at the neat appearance and quiet demeanor of the new and better generation of their race.

CHAPTER XI

STATE AND TERRITORIAL DAYS

**Christening Vulcan—Congressman Tawney on the Exposition—
The Bread-and-Butter State—Lewis and Clark Day—The New Ken-
tucky Home—Iowa Hospitality—Wisconsin's Tribute—Montana,
Wisconsin and West Virginia—The Battle of Fallen Timbers—At
the Hermitage—Indiana's Record—The Story of Oklahoma—Cal-
ifornia's Fifty-fourth Anniversary—Texas Week—Maryland's Rich
History**

GATE receipts alone did not measure the success which came to the Exposition through special days and extraordinary programs. Ceremonies, receptions, celebrations and entertainments did much more than swell the admissions. They enlarged interest in exhibits, they enriched the sense of grandeur in architecture and of charm in landscape. They rounded out the greatness of the Exposition. The millions of visitors more than marveled and admired. They lived the life of the Exposition.

From a Plan and Scope which determined that processes not products should characterize - which insisted that exhibits must be operative - the evolution of an exposition life was entirely natural. Day after day, night after night, the heart of the Exposition throbbed; the mind of it brightened; the soul of it broadened.

Those who lived the exposition life for a month, a week, a day even, went out having gained more than information, more than gratification of the artistic sense. They learned better consideration for their fellow man, stronger pride in country, broader appreciation of the whole world.

The celebration of state and territorial days contributed some of the most interesting chapters of the history of the Exposition. The following account of these special days is given in the report of the Division of Exploitation:

Alabama:

In the celebration of Alabama Day, June 7th, a colossal statue of Vulcan was unveiled and dedicated on the Alabama space in the palace of Mines and Metallurgy. Well's band furnished the music. A formal address of welcome was made by President Francis and a response by F. M. Jackson, president of the Alabama commission. Other addresses were made by Frederick J. V. Skiff, director of exhibits, and Dr. J. A. Holmes, chief of the department of Mines and Metallurgy. J. A. MacKnight, executive commissioner, read a report of the exhibits of the state.

Miss Miriam Jackson, daughter of the commissioner, christened the statue of Vulcan, breaking a bottle of champagne over the iron frame and exclaiming: "In the name of the people of Birmingham, I christen thee, O Statue of Vulcan!" This work was fif-

ty-six feet high and weighed sixty tons. It was made entirely of cast-iron. All of the vacant space in the Alabama section was filled with chairs to accommodate the large number attracted by the unusual ceremony.

By courtesy of the Kentucky state commission a formal reception was held in the evening at the New Kentucky Home. Among the invited guests were President Francis, the officers of the Exposition and their wives, the foreign commissioners and their wives, the state commissioners and their wives, and a number of St. Louis business men.

Minnesota:

Minnesota Day was celebrated June 7th by the enthusiastic dedication of the state's beautiful building, copied after the typical club house of the great lakes. Over a thousand citizens came from the Gopher state to make the day conspicuous, and among them not fewer than four hundred Minnesota editors. The exercises began at 10:30 in the morning. C. F. MacDonald, president of the Minnesota editorial association, was master of ceremonies. Upon taking the chair, Mr. MacDonald made a short address in which he alluded to the advances made by his state and congratulated the Minnesota commission upon the representative exhibit made at the Exposition.

President Francis, of the Exposition, made response to the chairman's opening remarks. He took occasion to thank the Minnesota Congressional delegation for their great aid in obtaining the necessary national legislation. He particularly thanked, in the name of the Exposition, James A. Tawney, chairman of the Committee on Expositions and Industrial Arts, for the all-important part he had taken in advocating and promoting federal legislation.

Conde Hamlin, chairman of the state commission and manager of the *St. Paul Pioneer Press*, delivered an eloquent oration in which he referred in terms of appreciation to the Exposition, its scope, beauty and purpose. "It is the fortune of few men," said Mr. Hamlin, addressing President Francis, "to build cities, and likewise of but few men to govern them, but upon you, sir, has been bestowed the unique privilege of presiding over a city of your own creation. I consider it the duty of every citizen in this and every country to view the beauties and study the lessons to be found in this 'City of Peace.'" The speaker concluded by presenting, in the name of the Minnesota commission, the state edifice to Governor S. R. Van Sant.

In his speech of acceptance Governor Van Sant expressed pride and satisfaction in the part his state had taken in the exposition movement. "This Exposition is a monument," he said, "to the states of the Louisiana Purchase and a display of the civilization of the world. We should justly be proud of our state, but we should be still prouder of our nation. We are not only citizens of Minnesota, but in a higher sense we are citizens of this republic, and the Exposition shows us that this means the highest type of civilization, for our country is the greatest triumph of human progress."

Congressman Tawney was given a most generous reception. The advanced position which he had taken as congressional champion of the Exposition seemed to be as popular in Minnesota as it was in Missouri. He congratulated the state commission upon its duties performed. He congratulated President Francis upon the marvelous success attending the construction of the Fair and upon the universality of the exhibits. He addressed the Minnesota press association with an entreaty to do all in its power to stimulate the attendance from a sense of national duty rather than from a sense of gain. On this branch of the subject Mr. Tawney said:

"This Exposition is not conducted for the purpose nor with the hope of gain. It did not originate with the states and territories of the Purchase with any thought of immediate financial advantage. It was not authorized by the federal government for direct commercial profit. The realization of the most extravagant estimates of attendance

would not begin to reimburse the federal government, the states, the foreign lands and the individual interested and participating for the amount actually expended in the construction, completion and operation. This is a great national and international event. It is intended to commemorate the greatest national achievement in the history of one of the youngest republics in the world. It is to educate the people in the world's advancement, to stimulate energy, to quicken human genius, to open up a mighty storehouse for the student and to broaden and brighten the daily life of the people."

A volume could not state the elementary purposes of the Exposition more fully and lucidly.

Short addresses were made by Theodore L. Hays, secretary of the commission by ex-President C. W. Stanton, of the Minnesota press association, and by J. M. Underwood, vice-president of the commission.

The Minnesota state building served admirably as a focus point for residents of the state. It had many of the characteristics of a club house, with a bureau of information and offices for the distribution of literature descriptive of Minnesota lands, industries, railroads, minerals and forests. A pleasant feature of Minnesota Day was the unfurling of a flag over this state building by Miss Minne Sota Whitney, a daughter of one of the commissioners. One of the decorations was the Star of the North made of ferns and flowers. The band of the Philippines constabulary furnished the music. Minnesota Day was one of the early notable successes of a long line of state days.

Before leaving St. Louis, Governor Van Sant and party were invited by Captain E. C. Anthony to a steamboat dinner on The Purchase, lying at one of the wharves. The governor had formerly followed the river and had made the trip from St. Paul in a steamboat. This invitation was readily accepted and highly enjoyed. At this dinner it developed that Minnesota is no longer content with being known as the Bread State, in addition to great crops of wheat she now produces a surplus of dairy products- "Let her be known as the Bread and Butter State," say all loyal Minnesotans. "Bread and Butter" let it be!

Montana:

Residents from the state filled every part of the home which the Montana commissioners built on Commonwealth Avenue on the Plateau of States and opened Montana Day, June 14th. Representatives from other states, foreign commissioners and Exposition officials were among those who congratulated Montana upon the success of the day.

In the absence of Lee Mantle, president of the Montana state commission, Martin Maginnis, vice-president, presided. Right Reverend D. S. Tuttle, a former resident of Montana, offered an invocation. In his opening remarks, Mr. Maginnis spoke of the achievement of Thomas Jefferson in the purchase of Louisiana. He spoke of Montana as a part of that purchase and mentioned the fact that she produces more gold, wool and copper than any other state.

President Francis spoke of Montana as a daughter of Missouri and said that in many respects the child had surpassed the mother. "Missouri," he said, "had given many of her citizens to the western states, and had furnished most of the governors of Montana." The President extended a welcome to the citizens of the Mountain State in part because it was within the Louisiana territory and in part because the people of Montana and the people of Missouri are in such close relationship.

Ex-Governor B. F. White then read a letter from Mr. Mantle in which he expressed his regrets at not being able to be present, and commissioned George F. Milburn, associate justice of the supreme court of Montana, to act for him.

Judge Milburn accepted the building in the name of the commission and described the part the state had taken in promoting the Exposition by securing attendance and installing exhibits.

Thomas H. Carter, chairman of the National Commission, gave a detailed account of the industries of Montana and congratulated the commissioners on the fitting representation which they had made at the Exposition. After the dedication a reception was held in the Montana building.

Oregon:

The Oregon state building was formally opened and dedicated Oregon Day, June 16th, in the presence of the Oregon commissioners and over two hundred citizens of the state, who had made the trip to the Exposition to participate in the dedication ceremonies. Oregon's building was a reproduction of old Fort Clatsop erected by Lewis and Clark shortly after their expedition reached the Pacific. The exercises were held in the stockade which surrounded the building. Jefferson Meyers, president of the Oregon World's Fair commission, delivered an address on "The Oregon Country and the Louisiana Purchase Exposition," formally dedicated the building and invited all World's Fair visitors to partake of its hospitality. He announced that June 16, 1846, was the day upon which the treaty was signed which fixed the boundary between the Oregon country and Canada. In remembrance of this international event each guest would receive a bunch of Royal Ann cherries which had been shipped from Oregon to aid in the celebration. The cherries were daintily tied in a Japanese napkin caught with narrow ribbons.

President Francis, of the Exposition, followed Mr. Meyers in an address in which he congratulated the people of Oregon and the Oregon World's Fair commission upon the excellent showing which the state had made at the Fair. He commended the Lewis and Clark Centennial Exposition to be held at Portland in the summer of 1905, and wished for it unbounded success.

Thomas H. Carter, president of the National Commission, spoke upon the Lewis and Clark Exposition and the importance of celebrating the work of the hardy band of pioneers which blazed the way to the Pacific Coast and established American supremacy there. Senator Carter described with elaboration of detail the construction of King Solomon's Temple. He spoke of its extravagance and expense and then said: "One of our exhibit palaces cost more than Solomon's edifice and is made of a greater variety of materials brought from more distant quarters of the world."

Professor F. G. Young, member of the Oregon commission, adduced many interesting facts relating to what Oregon has accomplished in the ninety-nine years she has been known to white men. After Professor Young's speech the Lewis and Clark flag was run up. It created much enthusiasm, floating over the historic old fort.

Nothing could have been more appropriate than the Oregon structure. In a most interesting way, it called to mind the relation between the Lewis and Clark expedition and the Louisiana Purchase. The fort itself was a reminder of pioneer life, always romantic and attractive. In it were the offices of the Oregon commission and from it was disbursed a great deal of literature pertaining to the Lewis and Clark Centennial Exposition. It was a convenient center at which to promote the interests of the coast and to dispense the open-handed hospitality for which the remote West is famous.

September 23d, the ninety-eighth anniversary of the return of Lewis and Clark to St. Louis from their historic expedition, was celebrated in the new Fort Clatsop with a literary program and a reception in the evening.

Kentucky:

"State days were marked features of the Exposition at St. Louis, and the Kentucky commission sought in this as in all other matters to compete worthily, for the honor of the state"-such is the language of the Kentucky commission pertinent to the celebration of Kentucky Day, June 15th.

A unique feature of the day was the presentation of the colors which the battleship, Kentucky, carried on her homeward voyage from Chinese waters through the Suez Canal - a voyage in which she broke all records hitherto made by men-of-war. The presentation was made by a committee of midshipmen members of the crew which made the trip. This committee formed a part of Governor Beckham's party, and the presentation ceremony took place in the Kentucky building where, on behalf of the state and the state commissioners, the magnificent gift was received by the governor. The flag was made of fine silk bought in China and was thirty-six feet long. It floated from the highest spar, indicating to naval men that the ship was homeward bound.

After an exchange of official courtesies at the Administration building the parade took up its line of march to the Kentucky building where it arrived at 11:30. The parade had a military bearing. All of the troops on the grounds, national, state and Philippines with their bands, joined in conducting Governor Beckham and party and the exposition officials to their destination, happily known as "the New Kentucky Home."

President A. Y. Ford of the Kentucky commission presided, and introduced the President of the Exposition, himself a native of Kentucky, who spoke feelingly in welcoming Kentuckians to the Exposition. He complimented the state commission and the Kentucky exhibit association on the manner in which the state was represented among the states of the Union.

The governor was introduced, and after accepting the colors of the battleship which had been unfurled in the center of the main hall, he gave a review of the close relations existing between Kentucky and Missouri. He said:

"Your success is our success; your greatness, our greatness. We do not 'have to show' you, for you know us. We do not have to tell you of our tobacco, our hemp, our bluegrass, our fine horses, our stock, our mineral wealth, and all those other products in which we excel. But we place above all those that greatest or nature's products, that perfection of God's handiwork, our men and our women, and we illustrate that greatness by pointing to our Francis, our Crittenden, our Stone, our Vest, and all those other illustrious Kentuckians whose brawn and brain have made possible this wonderful exhibition."

Harry B. Hawes, president of the Kentucky Society in St. Louis, was the next speaker. Among other things he said:

"It may be different now, but twenty years ago mint grew well, and water running through the limestone was plentiful, and corn-it grew higher then-with an abundance of good corn, good water and good mint, the colonels stayed-but their sons came to Missouri. They brought their horses with them-the kind that Henry Clay introduced into Kentucky. They brought Southdown sheep and short-horn cattle, and they founded a new Kentucky in Missouri. Transplanted, the young colonels began to run for office; one-third of Missouri's governors have been Kentuckians, one-third of her United States senators have been Kentuckians, and one-fourth of her supreme judges have claimed Kentucky as the state of their nativity. Kentuckians have attained distinction in Missouri as lawyers, as doctors, as bankers, as merchant-princes, and in every other vocation of life requiring intelligence and energy."

The exercises were interspersed with music by Well's band, and My Old Kentucky Home received more than the usual encores. All day long refreshments were served in the building. Secretary Hughes announced that the "mint in the Government building may be working only a few hours but the mint in the Kentucky building is working all day long-in Juleps."

Special music by Kentucky composers was rendered. The last speech of the day was made by Edward J. McDermott.

The Kentucky press association held a meeting in connection with the State day, and the very large general attendance from the state, coming as it did early in the Exposition season, was regarded as a good omen for attendance upon other state days.

Iowa:

June 17, 1673, the eyes of civilized man first rested upon what has been called the dominant state of the Louisiana Purchase-Iowa.

June 17, 1904, was Iowa Day at the Universal Exposition.

The Iowa commissioners introduced a new feature into the observance of state days. A splendid procession, military and civic, proceeded from the Plateau of States to the Terrace of States. From the hand of the President of the Exposition, the commissioners received the statue of Iowa; they decorated this statue from head to foot with flags and beautiful flowers. They commissioned one of their number, Leroy A. Palmer, to thank the Exposition for its monumental gift in the Colonnade of States; then with thanks to a higher Power and music recessional the parade returned to the state building. The order of the procession was:

Adjutant-General of Iowa and staff.

Platoon of mounted police.

Detachment of the Jefferson guard.

Battalion of Philippine scouts and band.

Battalion of Philippine constabulary and band.

Battalion of United States marines and Indian band.

Simpson, Iowa, College cadets and band.

Iowa State College cadets and band.

Marion, Iowa drill corps and band.

Governor A. B. Cummins and staff in carriages.

Iowa state commissioners in carriages.

Exposition officials in carriages.

National Commission in carriages.

Board of Lady Managers in carriages.

Iowa members of cabinet, United States senators, Iowa congressmen and Iowa state officers in carriages.

Wives of Iowa commissioners and state officers in carriages.

Battalion of South Dakota cadets.

Battalion of Wisconsin cadets.

Battalion of Kansas cadets.

Frazier (Tennessee) Light Guards.

South Carolina cadets and band.

At the Iowa building the official program was carried out in full

Organ processional by Mason Slade.

Invocation by Reverend Jesse Cole.

Keller's American Hymn by a double quartette.

Introductory address by William Larrabee, ex-governor and president Iowa commission.

Address by President Francis.

Song, "Iowa," by Mrs. Lincoln Bertha Huestis.

Address by Governor Cummins.

Song of the Flag by A. D. Middleton.

Oration by Thomas D. Healy.

Recessional, by double quartette.

Solo by L. H. Peck, St. Louis.

"Iowa, Beautiful Land," double quartette.

"America," sung by the audience.

At 4:30 a concert and organ recital were given. In the evening a reception was given in honor of Governor and Mrs. Cummins. In the receiving line were ex-Governor and Mrs. Larrabee; state commissioners and their wives; the secretary of the commission and Mrs. F. R. Conway, and Iowa state officials and their wives. The singers in the double quartette were: Mrs. Bertha Lincoln Huestis, Mrs. F. R. Conaway, Miss Bertha Sloan, Miss Anna Larrabee, A. D. Middleton, F. R. Conaway, E. W. Appleton, all of Iowa, and

L. F. Peck, of St. Louis.

In his address President Francis made the statement that: "The Iowa building was the first to be contracted for, and your present governor was the first official of any state to drive the corner stake of a state building. The Iowa building was the first to be completed, the first to fly the stars and stripes from her dome, and your commission was the first to extend the hospitalities of its building. Iowa men have been connected with the pioneer work and progress of the Fair, and the Exposition owes a great debt of gratitude to your state. I hope we shall ever continue to merit your good-will and friendship."

Governor Cummins said: "On a bright June day just two hundred and thirty-one years ago, the eyes of the white men first fell upon the beautiful shores of our beloved commonwealth. This, therefore, is a fitting moment in which to remember the process of the transformation from a wild, uncultivated, unpopulated territory to a civilized inhabited, cultivated state. As the scene passes before us in imagination it seems like a miracle. I am not permitted to paint the picture that I see so clearly before me. I can only ask you to look upon it, and to share with you the pride and gratitude which fill the heart. This Exposition shows the transformation."

Ex-Governor Larrabee, president of the Iowa commission, said: "Marquette and Joliet, intrepid travelers, came down the Wisconsin river, crossed over to the sunset side of the Mississippi river and ascended the high bluffs a short distance south of the city of McGregor, and planted the flag of their French sovereign. When we compare this first exploration with the present influence of Iowa in the nation, we need not wonder at this magnificent Exposition as an illustration of the ambition and enterprise of the people of the Louisiana Purchase. The Iowa commission is especially grateful to President Francis and the Exposition officers for their favor and kind consideration."

Senator Healy said: "It takes a larger number of people to make public sentiment in Iowa than in the states where population is more dense. We have political leaders but no political bosses. The strongest man and the most popular man is he who can prove himself innocent of the support of a machine. The charge is often made by critics of American Institutions that there is extravagance and waste in the administration of state and municipal government. Our state has no debt and carries a cash balance sufficient to meet her manifold obligations."

The Iowa house was used for a praise-service almost every Sunday during the Exposition period. Ex-Governor Larrabee presented and installed a beautiful organ in the building, and this was a valuable accessory to the Sunday service. Many state commissioners and others who lived upon the grounds enjoyed the ex-governor's hospitality. All were welcome and the kindly greetings of ex-Governor and Mrs. Larrabee will never be forgotten. Announcements of free musical recitals in the Iowa building appeared almost daily in the official program. The building was opened several times to accommodate the overflow at state functions in near-by buildings. In it Senator Allison met a cordial reception upon his quiet visit to the Exposition in November. The building was a delightful home for Iowa people, especially for members of the Iowa press. Secretary Conaway carefully kept a register of all Hawkeye visitors. This register was at the service of callers and answered many an inquiry. The last reception in the building was one of the most successful of the season, and general satisfaction was expressed that the structure would be taken down, moved back to Iowa and rebuilt as an annex to one of the permanent institutions of the state. It was furnished under the supervision of Commissioner Palmer, himself an art connoisseur. The lawn was decorated with heroic statues loaned by ex-Governor Larrabee.

Wisconsin:

The celebration of Wisconsin Day, June 29th, was marked by a military and civic parade and by exercise in which prominent sons of the state as well as the President of the Exposition and the governor of New York participated. It was concluded by a reception in the evening.

Governor R. M. LaFollette and staff and state officials were met at Parade Entrance by a detachment of one hundred and fifty cadets from the University of Wisconsin. The battalion of cadets escorted the official party to the Administration building where a formal call was made upon President Francie and the exposition officers. The parade then proceeded to the Wisconsin building on the borderline of the Plateau of States.

Music was furnished by the Merchants' and Manufacturers' Octette of Milwaukee and the exercises were held upon a platform erected in front of the building. ExGovernor W. D. Hoard, president of the Wisconsin commission, dedicated the pavilion and turned it over to President Francia. He said that the three million population of Wisconsin would be glad to make the President's acquaintance. "The Badgers are a busy people. They have brought one-half of their land under the plow, developed vast deposits of zinc, lead, iron, building-stone and the very best granite. Wisconsin stands second in the nation as a cheese-producing state. In the civil war she sent one-seventh of her enumeration into the army, and she was glad to take part in the great Universal Exposition of 1904."

President Francis accepted the delicate compliment proffered in the tender of the pavilion. In the name of the exposition management, he thanked Wisconsin's citizens for their interest in the Fair, and heartily welcomed them to an inspection of its attractions and exhibits. He was glad to note that they were making an effort to stand among the first who were competing for honors.

Governor Odell of New York made a short address, and Kirby Thomas, of Superior, Wisconsin, spoke on behalf of the press.

The principal address of the day was made by Governor LaFollette. He spoke in most enthusiastic words of Wisconsin, her scenery, her stock, her farms, fruitful soil, mines, forests and manufactures-all of which were represented at the Exposition. He paid a tribute to Jefferson, which was loudly applauded, and concluded with these words:

"Speech cannot express the indebtedness of the people to those who have wrought out in harmony the greatest work of the kind ever accomplished by man. Every worthy citizen should count it a great privilege and a patriotic duty to testify appreciation by personally participating in this memorable event. No one can come here and not feel impelled to carry this message back to his neighbors and friends. From the profoundest heart we thank you for the opportunity to see the Exposition and the welcome you extend to us. We pledge you the most cordial support of Wisconsin."

Governor LaFollette's address made a profound impression upon the large audience, and no doubt did much to direct attention of his state to the Exposition.

In the evening the state commissioners tendered a formal reception to Governor and Mrs. LaFollette and the Wisconsin state officials. The long receiving line was flanked by members of the governor's state in uniform, giving the function a military air.

The Wisconsin building was patterned after a large English cottage, with imitation of heavy timbers imbedded in walls of stucco. In a neighborly, informal way the state commissioners frequently entertained there. The press of the state was liberal in sending copies of publications for the reading room, so that the Wisconsin cottage became a Mecca for all visitors interested in Wisconsin people.

As an evidence of the good-will engendered by a visit to the Wisconsin cottage, T. J. McMahon, of Belfast, Ireland, wrote the following note under date of August 16th: "The Wisconsin state building expresses in one material glance the full measure of prosperity in material things and immaterial potentialities which characterize the state. Every Badger and Badgeress should go and take the kids."

West Virginia:

In the observance of West Virginia Day the usual order of exercises was reversed. The reception came first. In the receiving line were His Excellency, Governor A. B. White and Mrs. White, the wives of the state commissioners and the hostess of the building. Kern's orchestra furnished the music. The date was June 29th. Wisconsin dedicated her building in the forenoon; West Virginia, hers, in the afternoon.

The reception over, formal exercises began at four o'clock with an invocation by Reverend Dr. D. D. Purinton, of Morgantown, West Virginia, president of the State University: Colonel Fred P. Grosscup, vice-president of the West Virginia commission, presided. President Francis delivered the first formal address and expressed satisfaction at the magnificence of the West Virginia building and its appointments. The President alluded to the beauty of the structure and to the pertinence of passing the keys from the building to the user and said that the keys of the great Exposition were now within easy reach of all who desired to use them.

The keys of the building were delivered by the architect to Colonel Grosscup, who, in the name of the state commission, passed them to Governor White. The governor made a short address in response to what he called the flattering greeting of President Francis. State Commissioner John B. McGraw presented what has been termed the new flag of West Virginia and the governor directed that it be displayed. Mr. McGraw's speech received a flattering reception. He was followed by O. B. McKinney, a lawyer of Fairmount, who in turn was followed by Stewart F. Robinson, a lawyer of Parkersburg.

The West Virginia building had a large reception room on the second floor which communicated with verandas upon three sides. Refreshments were served in these verandas and a large crowd of West Virginians partook of the hospitality of their state.

Pennsylvania:

A sudden and violent thunderstorm came up in the morning of August 20th. This date was the anniversary of the battle of Fallen Timbers and had been appropriated by the Keystone state as Pennsylvania Day. At nine o'clock it stopped raining, and a dog-day sun came out, followed by what President Francis pronounced "the hottest day we've had since the Exposition opened."

Many things conspired to attract special attention to Pennsylvania Day. In 1876 the Centennial of the Declaration of independence had been celebrated by an exposition at Philadelphia—the first world's fair held on the American continent. It was in celebration of that centennial people began to understand the practical value of international competition, and to realize the inspiring and refining influences of a great exposition.

Out of regard for their old home former residents of Pennsylvania who lived in St. Louis had organized a Pennsylvania society, at the time one of the largest and most influential state societies in the city. To the Pennsylvania Society was assigned a prominent place in the state program. Neither rain nor heat was allowed to interfere with the arrangements.

Pennsylvania early manifested a deep concern in the success of the Universal Exposition of 1904. For state participation she appropriated \$300,000. Her state pavilion, with furniture, costing nearly \$100,000, was one of the largest and handsomest on the Plateau of States. From the 9th of June till the 16th of November hundreds of thousands of visitors were welcomed at this pavilion to see the Liberty Bell and other historic treasures of the state. If, at times, the staid old commonwealths of the East become impatient with the impulses and enthusiasm of the West, they ought to be reassured when they see how these same impulses inspire the deepest veneration and affection for the reminders of the colonial fathers. It would be hard to estimate the number of parents who brought their children to see the Liberty Bell; in simple words they told its story as though the bell were incarnate with the spirit of the American Revolution.

After Governor Pennypacker had paid his respects to President Francia at the Administration building the parade was formed to proceed to the Pennsylvania building. Governor Pennypacker and staff were escorted by the First City Troop of Philadelphia. This organization has the dress-coat and white facings of the old English trooper. The members wear buff breeches and spurred top-boots. The head-dress is fashioned after the casque of the old knights who fought in the Middle Ages and who delighted to overtop the head-dress with the most extravagant pompon. The uniform is elegant and rich. The select body of nearly one hundred mounted men, uniformed so differently from any military body seen in the United States, attracted wide attention and elicited admiring comment. Speedily the fact became known that here was a military organization which ante-dated the Revolutionary War. The City Troop had been the body guard of every governor of the commonwealth of Pennsylvania and it had marched in many inaugural parades at the national capital.

A squad of the Jefferson guard was detailed to assist in escorting the governor's party. In the parade were the Philippine scouts and their band, also a battalion of the Philippine constabulary. Several hundred persons came from Pennsylvania. The Pennsylvania society of St. Louis turned out full numbers. The parade reached the Pennsylvania building at twelve o'clock, where the Mexican artillery band and a detachment of the United States marine corps assisted in receiving the guest of honor.

James H. Lambert, of Philadelphia, executive officer of the Pennsylvania World's Fair commission, called the assemblage to order. In his speech Governor Pennypacker dealt largely with the historic relations of his state to the West. He claimed great and due credit for the Pennsylvania troops under "Mad" Anthony Wayne, who broke the strength and spirit of the Indians at Fallen Timbers on the Ohio frontier August 20th, just one hundred and ten years before. He narrated how Pennsylvanians had crossed the Allegheny Mountains and settled in the Mississippi Valley. Daniel Boone was one of these; John Lincoln, the great grandfather of Abraham Lincoln, had migrated from this state to the West; so, too, had Simon Kenton and a host of heroic men who, like the Clarks, became famous as soldiers, explorers, hunters, Indian fighters and backwoodsmen. The governor's speech was full of interesting data and comments and reached its climax when he declared with great state pride that both Pennsylvania United States senators supported the Louisiana Purchase Treaty, and every Pennsylvania representative in the House voted at Washington to make the necessary appropriation. President Francis was introduced and delivered a short address in which he recounted the deeds of the greatest men in the Keystone state's history, mentioning particularly William Penn, Benjamin Franklin and General Wayne. He told of the credit which belongs to Pennsylvania and to Philadelphia for holding the first universal exposition in the United States. In closing, President Francia paid tribute to the Pennsylvania commission and acknowledged the aid it had rendered to the exposition management, adding—"Pennsylvania never does things by halves."

A pleasant feature of the program was the recitation of an almost forgotten poem written just before the battle of Gettysburg by Mr. A. J. Duganne. This poem, "Hurrah for Pennsylvania," was a favorite of Governor Pennypacker, and he expressed his pleasure that the recitation was incorporated in the program of the state's day.

In the evening a general reception was given in the Pennsylvania building, at which Captain John H. Groome, of the First City Troop of Philadelphia acted as master of ceremonies, and Judge George D. Reynolds, president of the Pennsylvania society of St. Louis, introduced the guests.

Tennessee:

The Hermitage on the Exposition grounds, a replica of the home of President Jackson, was the center of interest September 1st for 4000 Tennessee people, who came to St. Louis to attend the state day ceremonies.

A military parade in the morning followed by exercises in front of the Tennessee building, in which President Francis and Governor J. B. Frazier of Tennessee participated, occupied the attention of all Tennesseans during the day, and at night a reception was given to the governor and party.

The Hermitage was decorated with festoons of southern smilax profusely strung on the white walls; the combination made one of the most artistic decorative scenes of the Exposition.

Shortly before ten o'clock Governor Frazier's party drove from the Inside Inn to the Administration building and paid their respects to President Francis. The honorary escort was made up of a detachment of the Jefferson guard; grand marshal and aides; battalion of Fifth infantry; Illinois National Guard; battalion Devlin's College cadets; Tenth Battalion New York National Guard. This escort conducted Governor Frazier and staff and the exposition officials direct to the Tennessee building.

The exercises were held on the front porch as the rooms were too small to accommodate the great crowd which had gathered. President Francis was introduced by E. Watkins, mayor of Nashville, and spoke mainly upon the history of Tennessee and her participation in the Exposition. "The admission of Tennessee into the Union," he said, "anticipated the Louisiana Purchase by seven days, and Tennessee, therefore, had a priority interest in the Exposition." He referred to President Roosevelt's statement that it was largely due to the democrats of Tennessee that the purchase was made. President Francis warmly welcomed the citizens of Tennessee to the Exposition in observance of their state day and thanked the commissioners for their effective work in showing the resources of their state.

Governor Frazier spoke at length of the grandeur of the State of Tennessee. He said that she had furnished one of the greatest Presidents in the history of the country. Although Jackson did not excel in learning none surpassed him in courage and manhood. He also referred to the fact that Tennessee had furnished one-eighth of the Presidents of the United States.

Joseph W. Folk, an ex-resident of Tennessee, and E. B. Stahlman, president of the state commission, were, on the program for orations but neither was able to take part. After luncheon Governor Frazier, Commissioner B. A. Enloe and D. F. Wallace, secretary of the commission, made a tour of the grounds.

In the evening a reception to Governor and Mrs. Frazier, with their daughters, was tendered in the Hermitage. All Tennesseans with the badge of the state were admitted to the reception, and the number was very large. Governor Durbin and staff, of Indiana, called and exchanged official courtesies with the Governor of Tennessee.

It is interesting to note that the hostess of the Hermitage was a granddaughter of President Andrew Jackson. She was born in the real Hermitage and lived with her grandfather until his death. At the White House she was called the "President's Idol." In 1852 she was married to Dr. John M. Lawrence and was in her seventy-sixth year when she became hostess of the new Hermitage—a place of pleasant memory to all loyal Tennesseans.

Indiana:

In the Indiana Day procession were Governor Winfield T. Durbin and staff, the *Indianapolis News* newsboys, Indiana state commissioners, executive officers of the Exposition, Indiana state officials, Packard's military band, the battalion of Philippine scouts and band, the battalion of Philippine constabulary and band, and members of the Philippine Exposition board. The parade formed in the plaza of St. Louis and marched to the Indiana state building, where it was reviewed, and disbanded at 11 o'clock.

Indiana chose September 1st for her state day—a day when the American beauty rose, grown out-doors, is in perfect bloom. A thousand of these flowers were used to decorate the building and a thousand flowers of other kinds reinforced the beauties. The day was

perfect. The decorations were perfect. It was a great Hoosier gathering a state name which the governor said had evolved itself from an opprobrious epithet into a badge of distinction. A reporter for a daily paper paraphrased this into "From a name for jeers to a name for cheers." Under such auspices did Indiana celebrate her state day.

At 11:30 o'clock Lieutenant-Governor Gilbert, who was president of the Indiana commission, took the chair. The program was opened by all singing America. Dr. W. P. Dearing, president of the Oakland City College, offered the invocation. The chairman, in a speech highly eulogistic of Indiana and the Fair, introduced President Francis, who called attention to the fact that Indiana was one of the first states to make an appropriation for an exhibit at the Exposition, and that the example of this commonwealth was a valuable aid in the exploitation work. He spoke in the highest terms of the taste displayed in the Indiana building and of the exhibits which the state had installed in the great exhibit palaces. In closing, the President alluded to Lieutenant-Governor Gilbert's remarks regarding Indiana women and said that no matter how distinguished the sons might become they would owe it all to their mothers. The training of the mother, he said, counted more than all else in developing true manhood in the human race.

Among other things Governor Durbin said: "The Indiana farmer of today with a telephone at his elbow and mail delivered daily at his door, is nearer the Atlantic seacoast than he was even to his county-seat a few years ago. The thickening network of railroads, of telephones, and of telegraph lines, the vastly amplified channels for the diffusion of information, and the increasing complexity of our industrial system, contributing constantly to the growth of inter-dependence-all of these influences served and are serving to render state boundaries imaginary lines, maintained only for the sake of political convenience, by binding the American people together in a community of interest and feeling, greater today than yesterday-greater tomorrow than today. We have become more than a Union of states-we are a people."

Honorable F. B. Posey, member of Congress from the Evansville district, spoke upon "The Resources and Growth of Indiana." During the afternoon the Fort Wayne band and the Indianapolis newsboys band gave concerts. In the evening the state commissioners gave a reception to Governor and Mrs. Durbin. The entire Tennessee party made the Hoosier visitors a call, which the Indiana party returned later in the day.

The Indiana building was used as headquarters for a number of delegations from the larger cities of the state. The governor and state officers were entertained there not fewer than a half-dozen times. This building was opened, with an elaborate ceremony, June 3rd, at which time the Culver Cadets acted as honorary escorts to His Excellency, Governor Durbin. Sojourning Indiana troops were always welcome. Miss Alice Roosevelt was one of the distinguished visitors-she called dedicatory day. The governor-elect, Honorable J. Frank Hanley and Mrs. Hanley, were received there November 16th, and Vice-President Fairbanks was among the guests of honor. Balls, teas and receptions were frequently given at the Indiana building, and a visit from an Indiana congressman or senator was an occasion for much more than "honorable mention."

Oklahoma:

On the 5th day of September 4700 persons from Oklahoma came to celebrate Oklahoma and Oklahoma City Day. Festivities were held in Festival Hall. A reporter for one of the St. Louis papers enthusiastically wrote: "The prettiest feature of the day or any day was the sixteen handsome girls seated upon the stage from the 'Sun kissed City of the Southwest.' Clad in white gowns, the young ladies looked as fair and sweet as the flowers in the territory."

E. R. Kroeger opened the exercises with the overture of Tannhauser, and the Apollo club gave a reception.

President Francis was the first speaker and welcomed the great audience with a most

heartly greeting. He praised the country which less than two decades ago was virgin soil and now teems with beauty. Culture and refinement, he said, had been taken to Oklahoma from the states, and Oklahoma was equal in that respect to any of the states in the Union. He paid tribute to the enterprise which prompted a young territory to exploit its resources at the great Universal Exposition and to assume its responsibilities with courage and devotion.

Honorable Thompson B. Ferguson, governor of the territory, said he had made seven visits to the Fair, and expected to make one or two more. He had encouraged participation and, on the day assigned to the territory had arranged the shipment of a carload of water-melons, grown by Oklahoma farmers, to the Exposition for free distribution. Two thousand of these melons, each weighing from fifty to one hundred pounds, were cut open by waiters and served to visitors, regardless of the section of the country from which they came. With its attractions at Festival Hall and its attractions at the Oklahoma building, the territory's meed of popularity was full to overflowing that day.

In response to President Francis' welcome, Governor Ferguson said: "The story of Oklahoma reads like a tale of magic. Her advancement has been so rapid that when the story is told to those unacquainted with her history it sometimes appears to the listener like a tale from the Arabian Nights or a communication from a modern war correspondent. So great and rapid has been the development that even our newspaper men have to confine themselves strictly to the truth when reciting the story of her great achievements."

Robert E. Lee Van Winkle, mayor of Oklahoma City, said: "We have seven trunk railways connected with our city, thus giving our merchants an opportunity to supply the demands of a territory equal, if not superior, to any like area on the globe."

Honorable John W. Noble, ex-secretary of the interior, was introduced as "the Father of Oklahoma." He paid a high tribute to the girls on the stage and then gave a history of the territory from the beginning.

At the conclusion of General Noble's speech, Professor E. S. Vaugh, superintendent of the Oklahoma City schools, read an address from the cities represented by the young ladies upon the stage. When each was mentioned, the applause was loud. There was Miss Cincinnati, Miss Memphis, Miss New York, Miss Philadelphia, et al. Miss Cincinnati, different from the others, wore a rose-colored gown. Miss Chicago was a demure and diminutive maiden, not at all like the obstreperous young women whom St. Louis people are inclined to associate with the Chicago type. Miss Memphis wore a sash across her waist with the name "Memphis" in gold letters. There was also a Miss Japan, to whom the Japanese commissioners sent a beautiful nosegay. It is needless to say that the queen of Oklahoma City was finally crowned queen of the day.

The last speaker was C. Porter Johnson, formerly of Oklahoma City, who was termed the orator of the day.

In the evening the pavilion of Indian territory was open to all from Oklahoma.

California:

The state of California has been noted for attractive exhibits and open-handed generosity at great expositions. Her method has been to make a liberal appropriation to exploit the general resources of the state and then to encourage the various counties to participate with collective exhibits of their special industries—a method which concentrates public attention on given lines of industry identified with certain localities. Happily, the character of California's products is such that the plan works well; it gives individuality to the exhibits of the state and of each participating locality in the state.

California Day was September 9th, the fifty-fourth anniversary of the state's admission into the federal union. The California state commissioners and the California county commissioners together with citizens from the state generally left nothing undone to make the day memorable in the history of the Exposition.

The exercises were under the auspices of a society known as the Sons and Daughters of the Golden West—true descendants of those modern argonauts, who in 1849 laid the

foundation of California's greatness. This society, in which are members of the richest and most influential families on the Pacific coast, was represented by fifteen hundred native Californians, and the grand president, C. F. McLaughlin, who as orator of the day spoke on behalf of the order which he represented. He spoke of the state's pride in the Exposition and of the appreciation which her people were showing by liberal patronage of the World's Fair. The speaker alluded to the greatness and importance of California. He paid a tribute to the ancestors of the native sons and daughters and eulogized those adopted sons who had aided in making the state rich and great.

President Francis, of the Exposition, was introduced and extended an official Welcome to the Sons and Daughters of the Golden West, and to all other Californians visiting the Fair. The President congratulated the people of California upon the exhibition which their state had made at the Exposition and thanked the commissioners, both state and county, for their successful cooperation.

Addresses were made by L. F. Byington and F. J. Sullivan, and an original poem was recited by Miss Julia F. Tanner. This poem was written by a Sister of Charity, Anna Raphael of Notre Dame, and was entitled, "California at St. Louis."

All of the literary exercises were held out of doors in front of the California building, which was a copy of La Rabida, a Catholic mission built by the Jesuit fathers and justly celebrated as an interesting type of Spanish architecture. In the rear of this building was erected a platform decorated with indigenous shrubs and flowers, from which fruits and wines were dispensed. Carloads of oranges, grapes, peaches, pears, plums, figs, raisins, apples and apricots were given to the waiting throng. A great deal of choice fruit had been arranged in baskets and was sent with the compliments of the county commissioners to the different state buildings, to the various commissions, to officers of the Exposition and to the local press. Among the novelties contrived by the state commissioners was a large cornucopia out of which poured a bountiful supply of pantry dainties, nuts and fruit confections, tied up with ribbons in fancy boxes, on the lids of which were pictures of La Rabida. Seven thousand bottles of wine were given away. The lawn around the state building was so crowded that it required the entire California force to hand out the much-coveted souvenirs. This distribution of wine and fruit was so lavish that not a person left the premises without a remembrance of the hospitality of this generous and opulent state.

The exercises were held in the afternoon. In the evening the state commissioners, J. A. Filcher and Frank Wiggins, gave a reception at the San Francisco building on the Model Street. California Day closed with a special display of fireworks in which were outlined pictures of Governor Pardee and President Francis. A pleasant feature of the day was the presence of a large number of California editors, who witnessed the proceedings with interest and pride.

Texas:

Texas began to celebrate September 12th. Paul Waples of Fort Worth was commissioned to perform the duties of executive commissioner and was authorized to devote a week to special attractions pertinent to the Lone Star state. Mrs. J. F. Wolters of Lagrange had been appointed hostess of the great building for this week. Mrs. Wolters introduced a new feature into each day's social program. Mrs. Annie McLean Moores, of Mount Pleasant, a member of the Board of Lady Managers, was a frequent visitor at the building and assisted at all of the receptions. Honorable J. L. Slayden, member of Congress from the San Antonio district, spent the week at the Fair and devoted much attention to Texas people and their meetings in the great pavilion.

The National Association of Mexican War Veterans held a reunion at the Texas building, September 17th. Among the one hundred and sixty members of the association present was Lamar Fontaine, author of "All's Quiet Along the Potomac Tonight." Although seventy-six years of age, Mr. Fontaine proved that he was not only a soldier and a poet, but a sing-

er of no common ability. He had served fifteen years in the United States navy, was in the war with Mexico, served four and one-half years in the Confederate army, and had been in the siege of Sebastopol. For gallantry in the Russian army the Iron Cross of Peter the Great was presented to him, a most distinguished honor for an American citizen. Mr. Fontaine was the first white man born at San Antonio and was on the site of Austin before a single house was built there. He wore the uniform of a Confederate soldier, and though born in 1828, his hair was almost black. Recently Mr. Fontaine had spent most of his time abroad in Russia and the Orient. He was justly the guest of honor at all functions given in the name of Texas during Texas week. A volume containing the biography of Lamar Fontaine, the soldier, would make a fitting companion-piece to a volume containing the biography of Sam Houston. Private John Allen made a characteristic address to the Mexican War Veterans. This assembly of old men, in their service-worn garments, presented a rare spectacle; in it was many a character worthy of the pen of the poet and the rich imagery of the romanticist.

Each day a program of recitations and music was given. Among those who helped in these entertainments were:

Miss Irene Shaw, of Dallas,	Mrs. Charles Fischer, of Dallas
Miss Marie Marcelle, of Dallas,	Miss Theodora Sturkow, of Chicago
Miss Maude Gillespie, of Dallas,	Miss Elfia von Schneider, of Dallas
Miss Elsie Peeler, of Waco,	Miss Estella McHenry, of Palestine
Miss Merle Bowen, of Waco,	Miss Lalla Roche Lewis, of Beaumont
Mrs. George Barney, of Fort Grange,	Miss Nellie Hassenlirack, St. Louis
Mrs. Marie Bohan, of Georgetown,	Edgar Arbuckle, St. Louis

Mrs. Emma H. Townsend, Corsicana, Texas, gave illustrated lectures on health culture.

The Texas commissioners arranged for special excursions during Texas Week so that the Lone Star Pavilion was frequently taxed to its capacity to accommodate the visitors. Waco, Denison, Denton, Taylor and Fort Worth, all sent special delegations. Such times as these demonstrated the great practical value of the state buildings.

Maryland:

September 12th was Maryland Day. In a speech significant for its eulogy of the Catholic nobles who founded the colony of Maryland, General Baughman, chairman of the state commission, concluded introductory remarks with this earnest and striking language:

"It is a sublime spectacle and a history of which we may well be proud. A Catholic nobleman, at a time when his faith was proscribed in England and when priests and laymen were hanged, drawn and quartered, for the practice of it as late as 1628, founds a colony upon religious liberty, throws open the doors of his domain to the world, and in an age of fierce intolerance, directed chiefly against Catholics, proclaims religious toleration. 'Then and thus,' says McMahon, 'landed the Pilgrims of Maryland.' And then and thus were laid the foundations of the old city of St. Mary's and of our present state. 'And religious liberty,' says Bancroft, 'obtained a home, its only home in the wide world, in the little village which bears the name of St. Mary's.' Such are the beautiful auspices under which Maryland was established. Its prosperity, its peace seem secure. Its history is the history of benevolence, gratitude and toleration."

If, in the summarizing of the events of Maryland Day, no other incident was found but the forceful tribute which General Baughman paid to the fundamental principles of George and Cecil Calvert, the first and second Lord Baltimore, the celebration would have taken high rank in the observance of these state days. But more was to follow. General Baughman introduced Honorable Edwin Warfield, governor of the state, who proceeded to amplify upon what had been said, and in a review of the history of this interesting old

commonwealth declared:

"Maryland was the cradle of the Presbyterian church in America. The first regularly constituted church of that denomination in the United States was erected at Rehoboth, Somerset County, with Reverend Francis Makemie as its first minister. Maryland was the only colony where the Presbyterians could get toleration. It was in Maryland that the first bishop of the Episcopal church consecrated in America resided - Right Reverend Thomas John Carggett, bishop of the diocese of Maryland, who performed an important part in laying the foundation of this great and historic church. It was in Maryland the Methodist Episcopal church of America was established and the first house of worship was built by that now powerful Christian denomination that has done so much for the upbuilding of both civilization and religion in this as well as in other countries. In Maryland is the oldest Roman Catholic Church diocese in the United States-the archdiocese of Baltimore. Representing that church, we have its only cardinal in the United States, Cardinal Gibbons, that man of simple and pure life, true patriotism and high Americanism. Thus, it will be seen that upon Maryland's soil was first established in the United States these four great Christian churches that have been such potential forces in shaping the destiny and greatness of our nation."

These two speeches on the same popular subject show how rich and replete is the history of the colonial states. They correlate but do not trespass in bringing out facts of vital importance. Some of these facts have been well-nigh forgotten and nothing but a great occasion like a universal exposition is equal to recall them to the public mind or to reinstate them with the dignity which they deserve.

September 12th was selected for Maryland Day because it is the anniversary of the battle of North Point. This battle was fought in front of the city of Baltimore in the war of 1812 between the state militia of Maryland and the British regulars. Lord Ross' men, intoxicated with recent victories, sought to invest Baltimore and reduce it, as they had captured Washington and sacked the federal buildings. In the battle of North Point the British army was defeated, routed, and soon after recalled from the country. For ninety years the anniversary of this battle has been celebrated in the state of Maryland and is popularly known as Old Defenders' Day.

Governor Warfield and his staff arrived in carriages at the Parade entrance at 11 o'clock. From there they were escorted by the Philippine scouts, constabulary, and a detachment of United States marines to the Maryland building. At the building the governor's party was joined by President Francis, Governor Blanchard of Louisiana and his entire staff, Mayor Wells of St. Louis, and the Maryland commission.

The governor was attended during the day by a large delegation representing the Maryland society of St. Louis. A committee of this society consisting of Murray Carleton, chairman; W. H. Thomson and William H. Lee, had taken an active interest in preparations for the ceremonies. After the military organizations had passed in review at the Maryland building an informal reception was held and, as a reporter for one of the St. Louis papers asserted, "true Maryland hospitality was dispensed." As this was in the midst of the fruit season the Maryland commissioners had taken advantage of the occasion to advertise their orchards and state industries.

After a luncheon in the New York building the entire party was conducted to Festival Hall for the formal program. In his speech of welcome President Francis highly praised the part which Maryland had taken in the development of the Louisiana Territory and thanked the governor for his interest in the Exposition. In referring to the Maryland society in St. Louis he said: "it is claimed that Kentucky sent good men to Missouri to develop the country but left their best sons at home. I know that Maryland sent good men to Missouri, and if better men were left at home, it is no wonder that the state has taken such an important part in the history of the United States and that the chief city recovers so wonderfully from the devastation of the recent great fire."

In referring to that part of President Francis' address which touched upon the part

Maryland had taken in the purchase of the Louisiana Territory, Governor Warfield said: "He was a Maryland congressman, Daniel Carroll, who offered the initial resolution and started the movement which resulted in acquiring Louisiana." The substance of that resolution is: "The United States, in Congress assembled, should have the sole and exclusive right and power to ascertain and fix the western boundary of such states as claimed to extend to the Mississippi River, and lay out the land so ascertained into separate and independent states from time to time as the number and circumstances of the people may require."

In the heraldic design of the great seal of Maryland are a farmer and a fisherman supporting the shield. Governor Warfield declared that in the early days these were the only vocations and that they are still leading factors in the prosperity of the state. It was a Marylander, Obed Hussey, who invented the first sickle-knife for reapers, and the first perfect self-raking reaper was invented by Owen Dorsey, of Howard County, Maryland. It was in Maryland that the first steamboat was operated twenty-five years before Fulton launched the Clermont. The first steam railroad in America was built in Maryland and the first electric road built in the world was in Maryland. In Maryland the first telegraph line in the world was constructed; the first water company and the first gas company were organized. The address of Governor Warfield was freighted with so much information, was so original and strong, that it made a profound impression upon all who heard it.

All of the speakers alluded to the Star-Spangled Banner as our national anthem and paid a glowing tribute to the writer who composed it while a prisoner on a British warship in Maryland waters. Miss Edith Ford, of Baltimore, gave a recitation to the enthusiastic satisfaction of her auditors.

Joseph L. Brent, of the Society of Colonial Wars, gave an historical address which closed the literary part of the program. That evening Governor Warfield held a formal reception in the Maryland building, thus closing one of the most interesting state days ever held at an exposition.

CHAPTER XII

STATE AND TERRITORIAL DAYS-CONTINUED

**Louisiana Re-enacts the Purchase—Mississippi and Beauvoir—
Boston Charter Day—Colorado's Cantaloupes—Illinois' Elaborate
Program Jefferson and Monticello—Arkansas Apples—The Dako-
tas—Roosevelt's Cabin—Georgia Products—The Sunflower—The
Empire State—Ford's Old Tavern—Rhode Island's Religious Liber-
ty—Ohio and Maine**

THE relation of the State of Louisiana to the Universal Exposition of 1904 is an inexhaustible source of history, the roots of which strike deep into the national politics of Europe and the outgrowth of which affects every state in the American Union. Referring to British statesmen, Napoleon Bonaparte said: "They shall not have the Mississippi River which they covet. This accession of territory strengthens the power of the United States, and I have just given to England, by the sale of Louisiana, a maritime rival that will sooner or later humble her pride." When Marbois, a cabinet minister, pointed out to Napoleon the obscurity of the boundary of the Province of Louisiana, the reply came: "If the obscurity were not in the treaty, perhaps it would be good politics to put it there." The First Consul had in mind the extension, by occupation of the Americans, of the province to the Pacific Ocean; that came, but it was something which France could not grant by treaty. "I have signed away an empire," said the great soldier as he threw down the pen. Thus, close were the relations of the Province of Louisiana to the international politics of France and England. The territory was named after Louis XIV. The city of St. Louis gets its name from Louis IX. The city of New Orleans derives its name from the French duke.

Spain became interested in the Province of Louisiana in 1762 when it was ceded to her by the crown of France, and she counted it among her possessions till the year 1800, when by secret treaty it again became a possession of France, although delivery was not made until later. Under Spanish rule the cabildo was built in New Orleans. It was in that city and against the Spanish throne that the first American revolution for political liberty broke out. The creole patriots were suppressed by an army under command of the Spanish count, Don Alexandro O'Reilly, at New Orleans in the year 1769. Several of these patriots were executed within view of the site where the cabildo now stands. A simple statement of these dominating facts shows how closely the history of the Province of Louisiana is interwoven with the national affairs of France, England and Spain. It also shows why the celebration of Louisiana Day, September 14th, was bound to attract wide attention of all classes, but more especially of those who perceive the force in dramatic events.

Louisiana began early to prepare for the Universal Exposition which was to celebrate the centennial anniversary of the purchase of the territory. The state legislature made an appropriation of \$100,000 and the citizens of the state subscribed an additional \$200,000. The exposition management was much pleased when it received the news that the Louisiana state commission had adopted a copy of the *cabildo* for the state building. This news was all the more gratifying when it was announced that upon the day set apart for that state, the ceremony of completing and proclaiming the transfer and giving effect to the purchase treaty would be enacted in this copy of the ancient and historic building. Nothing could have been more appropriate; nothing more edifying. The report of the Division of Exploitation follows:

Louisiana:

The ceremonies of Louisiana Day began at 10 o'clock September 14th. A delegation of the Louisiana state commission met Governor N. C. Blanchard at the Buckingham hotel and escorted him with his distinguished staff and a company of the famous Washington Artillery to the Parade entrance. Thence the party proceeded to the Administration building, where President Francis and other exposition officials joined the Louisiana delegation. The procession was conducted by Brigadier General Rice to the *cabildo*. Military features of the parade were strengthened by the addition of a detachment of the Jefferson guard, the battalion of Philippine scouts and band, the battalion of the Philippine constabulary and band, the United States marine corps and a battalion of United States troops.

After reviewing the military parade, the official party repaired to the *cabildo*, where it was greeted by a crowd which filled a space improvised for Jackson Park in front of the building and all of the available space in the *cabildo*. The exercises opened at once in what was known as the hall of the council or chapter-sala capitular-a close reproduction of the original room. The interior was decorated with palms, flags and bunting, blue and white, the colors of Louisiana.

The Garde Republicaine band from Paris, opened the program with Dixie and furnished music for the entire day. Governor Blanchard called the assemblage to order and recognized Dr. W. C. Stubbs of the state commission, who read Governor Blanchard's proclamation giving official notice of the Exposition and its purpose. Professor Alcee Fortier of New Orleans read the treaty of Paris signed April 30, 1803, giving special attention to article 3 which is said to have been added to the protocol by Napoleon himself. This article throws some light upon the character of the First Consul and is as follows:

"The inhabitants of the ceded territory shall be incorporated in the Union of the United States and admitted as soon as possible, according to the principles of the federal constitution, to the enjoyments of the rights, advantages and immunities of citizens of the United States; and in the meantime, they shall be maintained and protected in the free enjoyment of their liberty, property and the religion which they profess."

Neither Marbois, the public treasurer, nor Talleyrand, the prime minister, both of whom had been in America where one had found a wife and the other a fortune, understood the question as well as the First Consul. His great mind without effort seemed to illuminate every phase of the treaty; he caused it to protect resident Frenchmen as well as to frustrate the hope of the English ministry. Some historians assert that Napoleon had instructed Talleyrand to take \$12,000,000 for the Louisiana province rather than lose the sale-a fact so adroitly handled that it escaped both Livingstone and Monroe.

After Professor Fortier had finished reading the treaty, the last section of which stated the agreed consideration, Lucien Sontat du Forsat read the proclamation of Napoleon directing an exchange of official copies, and certificates that the treaties had been duly ratified

at Washington and Paris. Representatives of Spain, France and the United States took part in reproducing this historic scene until finally Charles F. Claiborne, grandson of the first American governor, proclaimed that Louisiana now belonged to and was a part of the United States. Pierre Chouteau, descendant of the founder of St. Louis, then hoisted the United States flag to the top of the cabildo and twenty-one guns were fired in salute by the Washington Artillery of New Orleans. This salute was identical with that which the records declare actually marked the transfer ceremonies. It is interesting to note that the participants in these historic reproductions were descendants of the real actors. The formal speeches of the occasion were delivered by President Francis and Governor Blanchard. So interesting were the proceedings that the great crowd stood for two hours without a murmur.

Governor Warfield of Maryland, Governor Bates of Massachusetts, Governor Dockery of Missouri and Governor Blanchard had seats on the platform, while Messrs. Sontat, Fortier, Wilkerson, Estopinal and Zacharie, all of New Orleans, enacted the historic drama.

At the close of the exercises, luncheon was served in the Louisiana rice kitchen on the Model Street, where Governor Blanchard and his party of two hundred were entertained. In the evening, Governor and Mrs. Blanchard held a reception in the Louisiana building. In the receiving line, beside the governor and his wife, were President Francis and Mrs. Daniel Manning, president of the Board of Lady Managers. About a thousand guests attended the brilliant affair which concluded with a ball, in honor of the governor and his party, held in the sala capitular.

In the evening a series of special pieces of fire-works was displayed illustrating historic events in the history of the state.

Louisiana acquitted herself with such credit upon this occasion that the proceedings should be elaborately and worthily written and preserved in the literature of the nation.

Mississippi:

In the exposition calendar September 15th, is marked "Mississippi Day." It is also marked "St. Louis Day." It bears the high distinction of attracting more visitors than any other day.

The state building of Mississippi was a replica of Beauvoir, the last permanent home of Jefferson Davis. It was typical of the country-seat of a plantation gentleman. Its low ceilings, amplitude of wide veranda, old fashioned windows and broad doorways made it an inviting place in which to give teas, receptions, balls and other social indulgences, bound to spring up in a colony of refined and energetic people such as lived the better part of a year on the Plateau of States. It was in this building that Governor J. K. Vardaman and the Mississippians celebrated their state festival.

For three days Governor Vardaman had inspected the exhibits of Mississippi. His address, therefore, was not wanting in state pride. He declared:

"Mississippi was the first state in the Union to agitate the abolishment of imprisonment for debt. She led the movement in that great reform. She abolished imprisonment for debt January 23, 1824. Mississippi was the first state in the Union to apply the principle of popular government to the judiciary. The state constitution of 1832 provided for the election by the people of all the judges in the state. Mississippi was the first state in the Union to remove the common law disability of married women. The first act in that direction was passed in February 1839. Mississippi was the first state in the Union to establish an institution providing for the higher education of young women. This was done in 1880, by providing an industrial institute. Mississippi was the first state in the Union to solve the problem of white supremacy in the South by lawful means. The constitution of 1890 disfranchises the ignorant and vicious of both races and places the control of the state in the hands of its virtuous, intelligent citizens."

Nor did Governor Vardaman fail to make plain that he was familiar with the history

of the Louisiana Purchase. By way of contrasting the great work of Mississippi with that of Massachusetts he said:

"In the year 1803 the legislature of Massachusetts adopted the following resolution: 'Resolved that the annexation of Louisiana to the Union transcends the constitutional power of the government of the United States. It forms a new confederacy to which the states united by the former compact are not bound to adhere.' And when Louisiana a few years after knocked for admission into the Union, Josiah Quincy, an influential member of Congress from Massachusetts, said: 'if this bill passes it is my opinion that it is virtually a dissolution of the Union; that it will free the states from their moral obligation, and as it will be the right of all so it will be the duty of some to prepare for separation, amicably if they can, violently if they must.' "

One of the most pleasant features of the Exposition was to note that the renaissance of the history of the admission of Louisiana resulted only in a sharper rivalry among the states as to which could produce the best exhibits, to give and take in a great competitive contest, and to demonstrate with a generous hand and in a liberal spirit fidelity to a great national enterprise. The commissioners from Massachusetts and Mississippi were men of wide experience and had broad conceptions of their duty. Time was when the vigorous words of Governor Vardaman, spoken from the threshold of Beauvoir, would have excited the residents on the Plateau of States and been reflected into the nation. Healing flows from the wings of a great exposition-healing needful in this country of ours.

Mississippi Day addresses were made by Commissioner R. H. Henry and Reverend Dr. Bowling of Jackson. Many of the state officials were present, and with the governor's staff enjoyed a social evening in Beauvoir. A large number of Mississippi people attended the reception. The state commissioners and exposition officials found time in the manifold duties of the day to call and pay their respects.

Miss Letta Vardaman, daughter of the governor, was a favorite with the Mississippi national guard. The officers had made her an honorary member of one of the regiments. Some old master painted what is known as "The Favorite of the Regiment," a young lady dressed in regimentals. Miss Vardaman appeared at the Mississippi reception in coat and hat of her father's favorite military organization.

The Mississippi society of St. Louis frequently met in Beauvoir in enjoyment of the old-time hospitality of the parent state.

Massachusetts:

Saturday, September 17th, was the anniversary of the signing of the first charter of the city of Boston; hence that date was chosen by the state commission as Massachusetts day. The state building was decorated both inside and outside with the national colors, potted plants and cut flowers. The old New England taste and sense of beauty were in evidence on every hand. On the first-floor visitors entered a reproduction of the senate chamber in the old state house at Boston, and on the second floor they found a reproduction of the new senate chamber at Boston. The contrast in these two senate chambers of a state conceded to lead in culture and refinement was striking.

Massachusetts Day was celebrated by Governor John L. Bates assisted by many state officials, hundreds of Massachusetts citizens, and several thousand visitors to the Exposition who assembled around the state pavilion during the exercises. The program of the day included interesting features and was concluded in the evening by a reception by Governor and Mrs. Bates in the Massachusetts building.

In the morning Governor Bates and his staff, accompanied by the Philippine scouts band and a battalion of the Philippine scouts, paid their respects to President Francis.

After an official reception at the Administration building, Governor Bates and his aides joined the parade, which formed an essential part of the proceedings of the day.

In the line of march were the state officials in carriages, a platoon of mounted police, a detail of the Jefferson guard, a battalion of United State marines, the fifth Massachusetts infantry, the Philippine scouts and constabulary with their respective bands, the Board of Lady Managers and National Commissioners in carriages.

These state-day parades added much to the attractiveness of the programs. Battalions of soldiers with fluttering flags and thrilling music, followed by long lines of equipages, transformed the passive crowds into throngs of responsive, eager, enthusiastic people. Massachusetts Day was no exception. At the end of the march the governor's pageant was received at the Massachusetts pavilion by Wilson H. Fairbank of Warren, Massachusetts, who was a member of the state senate and the executive head of the state commission.

The morning program was opened by the Grenadier Guard band of London. That band was at the time playing a stated engagement at the Exposition and the Massachusetts commission took advantage of it to secure the renowned organization to furnish music for their state day. The interesting fact was recalled that the Grenadier band, on its only previous visit to America, played the same overture at the great Peace Jubilee at Boston. The Reverend Doctor Burnham of the Pilgrim Congregational Church, a former resident of Massachusetts, offered the invocation. Dr. George Harris, president of the state commission, delivered an address, and President Francis, for the Exposition, welcomed the delegation from the Old Bay state, congratulating Massachusetts upon the showing at the Fair. Governor Bates responded to the President's address; his attitude toward the Exposition was shown in the following extract from his message to the Massachusetts legislature pending an appropriation for the Universal Exposition of 1904:

"The part which Massachusetts has taken in other exhibitions of similar character has been most creditable to her. Through her exhibits have been revealed the education, the character, the history, the industry, the progress of her people and the perfection of her products. In the activities of the state represented at the Exposition at Paris, we took high rank in competition with all the nations of the world, and obtained a far larger percentage of awards than did any other state except Germany. I need not emphasize the value of the western market to the industries of our state. An investigation recently made showed that the business houses of St. Louis bought during 1902, from Massachusetts direct, or through their New York buyers, \$26,000,000 worth of dry goods, cottons and woolens, boots and shoes, hardware, hats and drugs. Our goods come more and more in competition with the products of the new manufacturing industries of the great West. Our enterprising citizens who are contemplating the exhibition of their wares at this Exposition have the right to expect the co-operation and assistance of their state."

The program concluded with an address by Frederick J. V. Skiff, director of exhibits, of Massachusetts descent, and a song by Mrs. Howard J. Rogers, accompanied by her daughter.

The Massachusetts Day exercises were followed by a reception at the state pavilion in honor of Governor Bates and party. The rooms were specially decorated for the occasion with asparagus, southern smilax and roses. The building was crowded to its fullest capacity and the receiving line was busy handshaking for nearly two hours. The staff officers of Governor Bates in their brilliant uniforms formed the reviewing lines and directed the people through the building, an arrangement necessary on account of the great crowd. A feature of the reception which came near its close was the singing of America by the guests who were led by Father Hutchinson, ninety-six years of age, the last surviving member of the famous family of singers of that name.

Colorado:

"To be eaten without sugar!" A hundred thousand Colorado melons were given away September 17th. This date was chosen for Colorado Day because the Rocky Ford cantaloupe at its best is then on the market. Small crates of this fruit were sent to the state buildings and exposition offices. A Colorado official stated that seven car loads of cantaloupes were required for the feast of melons; they were dealt out with an open hand and only rinds were left.

Not only did Colorado fill the air with the fragrance of Rocky Ford melons, sweet enough "to be eaten without sugar," but she supplied the multitude with potatoes silver potatoes-and ribbons to tie them in their buttonholes. But the Centennial state did not stop with pleasing the nostrils and satisfying the stomach. Like most states, she too appealed to the mind and conscience-the all-pervading spirit of the great Exposition.

On the train which brought Governor Peabody were 1200 passengers from Colorado; it was, perhaps, the largest single state excursion to the Fair. The governor and party were met at Parade entrance by Major Hammond with a detachment of the Jefferson guard, and escorted to the Plaza of St. Louis, where the parade was formed. The Philippine scouts and band, the 2nd regiment band of the Colorado national guard, and other bodies of troops, which joined the line of march after Governor Peabody had paid his respects to President Francis, conducted the Colorado officials to the palace of Agriculture where the ceremonies were held.

Secretary I. N. Stevens, of the state commission, introduced President Francis, who spoke of the resources of the state and the wonderful progress it had made in the last two decades. He complimented Governor Peabody and the Colorado commission on the state's exhibits at the Fair, which he said were of the best. Director of Exhibits Skiff was the next speaker. He referred to his early life in the West and to the exposition work he had done for Colorado. He also paid a high tribute to the state commissioners for the part they had taken in the Exposition.

After a few general remarks Governor Peabody spoke about the specific industries of Colorado:

"All of Colorado is wondrously attractive; scenery, sunshine, altitude and air constitute some of the features which are making our state the health and pleasure grounds of the world, where the glowing sun shines three hundred and fifty days in the average year, and blends with the crisp electric mountain air to produce a climate matchless in the known world. Everything born in Colorado lives. No disease is native to our superb climate; malaria and fever are unknown, and consumption, in its early stages, finds a complete specific in the balmy, pure atmosphere known to our climate."

Immediately following the speaking, the free distribution of melons began. In the evening an informal reception was held in the Kentucky building.

Illinois:

Illinois appropriated two days, September 21st and 22nd, in which to celebrate as a state at the Exposition. Her state building was dedicated with impressive military ceremonies May 27th, and at other times the national guard of the state encamped on the grounds in such numbers that the public came to expect a military demonstration of unusual magnitude and brilliancy when Illinois functions were announced.

On the first day Governor Richard Yates reviewed a parade of Illinois livestock, which had taken awards at the Exposition. At 7 o'clock a dinner was served at the West Pavilion, at which the governor was the guest of the state commissioners. In the evening a reception was held in the Illinois building decorated and illuminated with special designs.

September 22nd Governor Yates was escorted to the Administration building, where

he was Joined by President Francis and party. The parade then proceeded to the Illinois building in the following order: Brigadier-General Rice, grand marshal, and staff; President Francis and party in carriages; Illinois state officials in carriages; Illinois commissioners in carriages; other state commissioners in carriages; Governor Yates and staff on horseback; the Illinois naval reserves and band; the Taylorville military company and band; Company M, 8th infantry, Illinois national guard; company E, 5th Infantry, Illinois national guard; company K, 6th Infantry, Illinois national guard.

At the building the program consisted of speeches by Governor Yates, President Francis and several members of the Illinois commission. Music was rendered by the Shelbyville quartet.

President Francis cited the success of the Columbian Exposition eleven years ago, and the wonderful exhibits made by the people of Illinois at the Universal Exposition of 1904. "Are you not proud of your Illinois?" he asked, "as we are proud of our Missouri. Both of us may congratulate ourselves that the two great Universal Expositions should be held in the heart of this country!"

Governor Yates responded in part as follows:

"Two hundred years ago, the explorers who came up the St. Lawrence and Mississippi met, passed and repassed each other in a beautiful country called by the Indiana 'Land of the Men-illini.' Both rivers led them to the shores of the Great Lakes with but little interruption. The dreams which they cherished, that eventually water ways would connect the commerce of the two great streams, are about to be realized. The State of Missouri has done much to make the hope a reality. The State of Illinois is now bending its energies to hasten the advent of that reality. From the mouth of the Mississippi to the mouth of the St. Lawrence, en route through the lakes and passing the very doors of St. Louis and Chicago, ocean-going vessels will meet, pass and re-meet with speed and ease. It is the destiny of Illinois and Missouri to hold in their hearts and protect in their arms the main channel of commerce-the circulation of commercial life in the great body politic known as the United States."

H. M. Dunlap, president of the Illinois state commission, presided and announced that the state building would be thrown open to the public in the evening. An interesting feature of the day was the free distribution of cut flowers by the W. C. T. U. of Chicago and other Illinois cities.

Virginia:

The initial ceremony of Virginia Day took place September 22d, when Governor A. J. Montague and staff arrived on the grounds and were tendered a reception by the state commissioners. The governor was accompanied by the Richmond Blues, an organization of light artillery famous throughout all Virginia for its service at state inaugurations and similar ceremonies. The Stonewall band of Staunton came as an accessory to the light artillery. The reception favors were confined to the Virginia society of St. Louis, the state commissioners and exposition officials - in all, about six hundred. Frank N. Johnston, of the Virginia society, introduced the guests.

Several Virginia excursions arrived on the morning of September 23rd, bringing at least 3000 passengers who wore the colors of the Sage of Monticello. Jefferson may easily be regarded as the patron saint of the Exposition. The reverential visitors from the Old Dominion gathered around the granite monument which so long marked the grave at Monticello, and, like the knights of old, refreshed their memories and renewed their loyal admiration at this plain and rugged shrine. Fitting it was that the gravestone of Thomas Jefferson, Father of the University of Virginia, should stand during the Exposition among the exhibits in the palace of Education. Fitting it was, too, that the State of Virginia should celebrate her state day in a faithful copy of the Jefferson homestead enriched with the furnishings of co-

lonial days. Not without sacrifice had this cherished old mother of presidents done her duty.

The observance opened at 10:30 o'clock when Governor Montague arrived at the Parade entrance and was met by a military escort which moved through the main picture of the Exposition to the Virginia building. The addresses began shortly after noon. Reverend Dr. John D. Vincil of St Louis delivered the invocation and G. W. Koiner, of the state commission, introduced the speakers.

Governor Montague spoke eloquently of the greatness, past and present, of Virginia, and predicted that the central part of the Louisiana Purchase would in the future become the social, commercial, industrial and economic center of the world. He dwelt with the fervor of state pride on the part which Virginia had taken in the acquisition of the Louisiana Territory and declared that she took a proprietary interest in its power and development.

President Francis was introduced as a descendant of Virginiana, and in reply said that when he thought of the greatness of the men who had been given to the country by Virginia, he felt justified in the pride he took in his Virginian ancestry. The President was emphatic in his acknowledgment of the part which the state had taken in the Exposition and thanked the governor and state commissioners for their participation.

Following the remarks of President Francis, was an address by Dr. Robert C. Atkinson of the Virginia society of St. Louis. Dr. Atkinson spoke at length of the manufacturing possibilities of the Purchase and gave way to James B. Gantt of the Supreme Court of Missouri, who spoke for the alumni of the University of Virginia. Judge Gantt claimed that it was the greatest university in the country, ascribing to its training the loyalty, high culture and sense of honor that distinguished its graduates. Robert H. Kern followed and spoke of the university as one of the greatest influences for intellectual development in the entire country, sustaining the remarks of the other speakers.

Virginia Day closed with a reception to residents of the state. "Old Richmond Punch" was served by the Daughters of the Revolution and the Colonial Dames of America. The day was notable for its renaissance of Virginia history in a building of romantic interest and association.

Arkansas:

Arkansas Day was celebrated September 22d with a military parade in which the national guard of Arkansas was prominent, and with literary exercises held under the trees in the rear of the state building. In order to avoid conflict with the Illinois program, Arkansas began festivities early in the day. There were given away 26,000 apples. The new crop of Ben Davis and Winesaps had just ripened. Before the Fair closed sharp competition set in between the Ozark fruit of Missouri and the Ozark fruit of Arkansas. From one state came a perfectly formed apple weighing thirty ounces; at once silence prevailed among all competitors. Suddenly the other state produced a perfectly formed apple weighing thirty-two ounces; then silence settled down upon the other side of the Ozarks. Before the Fair was over an apple, not so perfectly formed as the other two, was on display, weighing forty ounces. Arkansas Day was responsible for a good deal of this apple rivalry. It was responsible, too, for many a garment soiled and crumpled, caught in the prodigious crush of apple-hunters. This happened at a small booth erected in front of the Arkansas building on the Plateau of States.

The exercises were opened by Right Reverend William N. Brown, of Arkansas, and two assistants attired in surplices. A religious service of twenty minutes was held. This service was the first of the kind on a state program. George R. Belding, president of the Arkansas commission, was president of the day and delivered the opening address. He spoke of the greatness of Arkansas and of its participation in the Exposition. President Francis spoke at length, and highly complimented Governor Davis and the Arkansas commissioners for what he regarded as an exhibit completely representing the industries of the state. "The citizens of Arkansas," said he, "have been among the staunchest supporters of the Exposition

and have given it a large percentage of attendance." The President alluded to the value of the fruit display and its permanent effect in exploiting the products of a region once famed for "bears," now noted for apples.

Governor Jefferson Davis acknowledged the compliments of President Francis and spoke in detail upon the products of his state. He minutely described her resources and told with great enthusiasm of her growth in recent years. He closed by saying: "Last, but not least, she has a governor who is a governor." Governor Davis was cheered enthusiastically, and at the close of his address shook hands with a number of people who crowded to the foot of the speakers' stand for the purpose of congratulating him.

Philip D. Scott, National Commissioner from Arkansas, said that Opie Read and his Arkansas Traveler should be blamed for casting odium upon the good name and intelligence of the Bear state. He protested. He claimed that the inhabitants of Arkansas were of as high order of intelligence as any people in the Union. The speaker asserted that the citizens of other states were beginning to find this out, and the immigration into Arkansas was extraordinary both in numbers and in character; her immigrants were prosperous, devout and law-abiding.

In the evening the Arkansas building was decorated with prismatic lights and Japanese lanterns. The interior was decorated with a profuse display of flags, banners of state organizations, and bunting showing the national colors. The reception was informal and democratic. Commissioner Belding stood at the head of the line and presented the callers to Governor Davis, who bade them welcome and passed them down a long receiving line of Arkansas officials and prominent people.

The Arkansas building was headquarters for people from that state. There they met, received their mail, looked over the state papers on file, wrote letters, visited, rested, refreshed themselves and enjoyed the relaxation so welcome after sightseeing. Its space was frequently taxed, but never more than on Arkansas Day. The popularity of this building was due partly to the fact that Mrs. Frederick M. Hanger of Little Rock was a member of the Board of Lady Managers, and Philip D. Scott of Van Buren, a member of the National Commission. Few formal receptions were held in the building, but the demands upon it for ordinary usage were constant, and it met the demand.

North Dakota:

North Dakota celebrated September 27th as her state day. The exercises were held at the famous Roosevelt cabin on the North Dakota space in the palace of Agriculture. The space and cabin were decorated in honor of the state. Smilax, roses and North Dakota autumn flowers festooned among the field-products, expressed a welcome to the guests.

Governor Frank White, and family, arrived in the afternoon and were received by W. F. Cushing, director of the state's exhibits, and Miss Ella B. Carter, hostess of the pavilion. In the governor's party were Lieutenant-Governor David Bartlett and the World's Fair commissioners. They passed the afternoon inspecting the exhibits and enjoying an informal program. The Philippine band furnished the music. Refreshments were served from the Roosevelt cabin. Ice cream in the form of cabbages, strawberries, roasting ears, apples and other North Dakota products, was one of the novelties.

In the evening Governor and Mrs. White gave a dinner to the North Dakota commissioners at the Tyrolean Alps.

The Roosevelt cabin was a continual attraction to visitors. The North Dakota space was not large enough to accommodate the pressing crowds which sought admission to see the trophies it contained. Upon the occasion of her visit to the cabin, Miss Alice Roosevelt drove tacks in lines which made up the letters of her name. This conceit pleased the fancy of visitors. The President gave the plan of adopting the cabin for the state headquarters his endorsement and was an interested visitor to it while inspecting the Fair.

South Dakota:

South Dakota has long excelled in decorating public buildings with maize, wheat and other field-crops. For years her citizens furnished a large percentage of the visitors to the corn palace at Sioux City, Iowa, and when the time came to exploit state and district fairs for themselves, they had a good stock of practical knowledge from which to draw in beautifying their structures. From this start the skill of the South Dakotans expanded and expanded until they easily excelled in the art of grain ornamentation.

This in a measure explains why the South Dakota building was ornamented in such artistic fashion for their state day at the Universal Exposition. The interior was beautiful with wheat and corn arrangements. At the South Dakota festival, September 26th, all of the speakers touched upon this characteristic for which the state is famous.

The Reverend Dr. Columbus Polk, of St. Louis, offered an invocation. President Francis welcomed the South Dakotans in celebration of their state day and pointed out the great promise which the exhibits of the state made for the future.

Governor Charles H. Herreid responded devoting attention to the resources of the state and giving a short history of the state's progress. Miss Estelle Daugherty read a patriotic poem written by Deane Robinson, of Pierre, South Dakota. She also recited the South Dakota prayer.

In the evening a reception was given to the governor and eminent South Dakotans. S. W. Russell, president of the state commission, introduced the guests. For a young state, South Dakota acquitted herself with distinction in everything she undertook at the Exposition.

Georgia:

"No waiting, no delay!" - a greeting which savored of the Pike - was appropriated by the Georgians in the celebration of their state day, September 28th. Every part of the proceedings was carried out promptly. From the time of the parade in the morning, through the exercises in the Hall of Congresses, until the close of the reception at the state building in the evening, there was "no waiting, no delay."

W. J. Joyner, president of the International Association of Fire Chiefs, organized the Atlanta Fife and Drum Corps, which led the parade from the Georgia building to the Hall of Congresses. The commissioner-general, Dudley M. Hughes, introduced the speakers, who, representing a variety of interests, spoke on a variety of subjects. President Francis characterized Georgia as the empire state of the South and welcomed the governor and the visitors with such heartiness and eloquence that they received his welcome in the spirit of an ovation. He referred to the stupendous expenditures of energy, time and money required on the part of those who had been responsible for the physical creation of the Exposition and thanked Georgia for contributing liberally to the architectural and moral success.

Governor Joseph M. Terrell responded to President Francis' address of welcome. Briefly but eloquently, he alluded to the state's history, past and present, and to the probable future. He thanked President Francis for the welcome extended and closed with a stirring tribute to the brave men and beautiful women of Georgia. C. E. Dunbar, of the legislature of Georgia, and John T. Boifeuillet, of the Macon News, spoke on the industrial interests of the state.

Many of the state officers accompanied the governor and his staff, to whom the state commission tendered a reception in the evening. This reception was held in the Georgia building of special interest because the lumber, Georgia pine and other material, was furnished by the lumbermen of the state. This building was a copy of the colonial home of General John B. Gordon. It contained historic pictures of Governor Oglethorpe, of the two Wesleys, and a framed certificate that the first American Sunday school was held in the

state of Georgia.

Georgians pride themselves on a delectable concoction which they call Artillery Punch. It was in evidence this day, but the method of its making is still a state secret.

Kansas:

Kansas celebrated the fiftieth anniversary of the organization as a territory September 30th; the sunflower was the emblem of honor that day. It was estimated that not fewer than fifteen thousand Kansans were on the grounds wearing the flower in honor of their state. Much of this large attendance was due to a proclamation issued by Governor Bailey, September 12th, in which he notified the people of the designation of a state day and appealed to them to make its celebration creditable and noteworthy.

The parade was over a mile long and was the great feature of the exposition program that morning. It formed at the Kansas pavilion on the Plateau of States and proceeded to the Plaza of St. Louis in the following order: Platoon of mounted police; detachment of the Jefferson guard; Washington band of Kansas: Grand Marshal Kelsey and staff; Mexican artillery band; Governor of Kansas with mounted staff; carriages with President Francis and the Kansas commissioners; battalion of Philippine scouts and band; battalion of United States marines and band; battalion of Philippine constabulary and band; 34th separate company New York national guard; 3d battalion, 62nd Iowa national guard; Company M, 2nd Ohio national guard; a long line of carriages and the Ladies' band of Wellsville which brought up the rear of the parade with a large delegation of Kansas citizens on foot. President Francis and Governor Bailey reviewed the parade from the east band stand in the Plaza of St. Louis.

The exercises of the day opened shortly after 12 o'clock with a prayer by Right Reverend F. R. Millsbaugh, bishop of Topeka. After the prayer John C. Carpenter, president of the Kansas commission, introduced President Francis who entertained the large audience with a forcible address. He took occasion to congratulate Governor Bailey and the Kansas commissioners upon the participation of their state in the Exposition, saying: "Her exhibits as an agricultural state are not surpassed by any exhibit of the kind at the World's Fair."

In his response Governor Bailey reviewed the territorial and state history of Kansas. As typical of the remarkable development of this commonwealth he adduced the following salient facts:

"In the year 1903 Kansas produced 94,041,902 bushels of wheat, and 169,359,769 bushels of corn; sold surplus animals for slaughter to the value of \$54,644,272. And the same year Kansas housewives sold butter, cheese, milk, eggs and chickens, realizing \$15,175,747 for the same. This last item is more than the cost of the entire Louisiana Purchase. In 1902 Kansas produced 300,000 barrels of oil. In 1903 she increased that output to 900,000 barrels. Based upon the daily production, she this year will raise that output to 6,000,000 barrels. Of this record and history we are all proud; but, my hearers, the real greatness of Kansas is not in her material wealth, it is not in her billowy fields of grain, it is not in her countless herds, it is not in her mines of wealth-it takes them all to make Kansas; but the crowning glory of Kansas is her churches and her school-houses, her splendid manhood and womanhood and her happy homes."

Henry J. Allen, of Ottawa, followed Governor Bailey with a humorous address which took the fancy of the crowd. Among other things, he said:

"The governor has told you about the hens of our state producing eggs enough last year to pay for the entire Louisiana Territory. While this is true, we are not here today, Mr. President, to cackle about those eggs. We are not here to boast about the marvelous facts of material prosperity. We have our faults as a little, doubtless, but of one fault we are guiltless-we do not brag."

David Overmeyer, of Topeka, followed Mr. Allen in one of the most finished and schol-

arly addresses delivered upon the exposition grounds.

The program was interspersed with music from the Ladies' band from Washington and the Washburn college glee club. In the evening a reception was held in the Kansas pavilion beautifully decorated for the occasion. Dancing was one of the attractions and the crowd became so large that the Iowa building was thrown open to receive the overflow. Even this proved inadequate, and the Oklahoma pavilion was offered to relieve the congestion. It was accepted. Such was the success of Kansas Day.

Indian Territory:

A unique badge was seen on the lapel of many a visitor October 1st. The badge was red leather. On it was traced an Indian's head—a fine specimen of the pyrographer's art. Under the head were the characters I. T., signifying that a certain section of the country (for exposition purposes) was it.

The Indian Territory building was ornamented with corn, cotton, alfalfa and Indian handiwork. Thousands of visitors came from the territory. Classes came from the Indian schools and bands of music from the agencies.

The program opened promptly at 11 o'clock. President Francis extended an official welcome; General Pleasant Porter, chief of the Creeks, made an address of great credit to the territory, the Exposition and himself; Charles B. Stuart, of South McAlester, and Governor Thompson B. Ferguson, of Oklahoma, made addresses. A band from Tulsa and another from Chilocco furnished music.

The executive commissioner, F. C. Hubbard, provided a musical program for the afternoon. In the evening the building and lawn were specially illuminated for a reception.

New York:

The celebration of New York Day began at 11 o'clock, October 4th, at the state mansion on the Plateau of States. Preliminary to the formal exercises the Garde Republicaine band of Paris, France, played an overture in front of the building. The execution of this piece was so pleasing to the New Yorkers that before they released the players the overture had grown into a concert.

The program announced was carried out in the grand salon of the building and was opened with an invocation by Reverend Dr. W. W. Boyd, of St. Louis, formerly of New York.

Colonel Edward Lyman Bill, president of the day, spoke of the history of the New York commission and of the state's exhibits at the Exposition. He declared that the Universal Exposition of 1904 had a deep interest for his state. One of the principal figures in the negotiation of the Louisiana Purchase was Robert R. Livingstone, United States minister to France, a son of the empire state. Colonel Bill recalled many facts relating to the Purchase treaty and insisted that the position of Mr. Livingstone determined its fate. Mr. Livingstone was the first to sign the treaty and this act threw the influence of a powerful state to its support. New York's support went a long way toward neutralizing the opposition of the New England senators, many of whom insisted that the territory could not be brought within the constitution, and that the people of Louisiana would be subjects, not citizens. One of the most interesting debates of the early congresses came upon the appropriation bill which provided for the payment to France. New York supported the bill.

Franklin Ferriss, general counsel of the Exposition Company, extended a welcome greeting in the name of the President-absent because of a bereavement. Judge Ferriss regretted the absence of the President but said he would gladly assume the honor of receiving the people of his own native state and extend to them an official welcome. President Francis bade him say to the representatives of New York that there was no state to which he would more earnestly extend the courtesies of the Exposition than their own. He spoke of the

great co-operation of the state officials in the task of collecting and installing the numerous exhibits of the state at the Fair. He complimented New York upon being the home of the hostess of the building. Mrs. Dore Lyon, and of the president of the Board of Lady Managers, Mrs. Daniel Manning.

Colonel Bill introduced Governor Benjamin B. Odell, Jr., who spoke at length on the history of the Louisiana Purchase and the great results obtained by the United States from it. In closing his historic address, he said:

"This Exposition stands not only as a monument to our progress, but to our united and determined effort to take a prominent part in all that means the advancement of mankind and the prosperity of the whole world. We owe what we are at present to the devotion and heroism of the men of the past, and to protect and guard the inheritance which has come to us should be our aim. To be broad and conservative in our conception of our duties and responsibilities should be our purpose. To instill into the minds of our youth a determination to meet every question with true American courage should be our object. Every effort that makes for the good of humanity is a fitting tribute to that national policy which has taught us that there is no responsibility too great for our citizens to bear, and that in the onward progress of civilization America recognizes her duty and will not fall in its performance."

Governor Odell was accompanied by his staff of thirty officers, his wife and daughter. The party remained several days viewing the Fair. In the evening a reception and ball were given in honor of Governor Odell and party at the New York building. This function was tendered by the state commissioners and was one of the most brilliant social affairs held on the grounds, a result all the more notable as the ball of the Veiled Prophet was held in the city the same evening and many were apprehensive that the two events would interfere, but wise management intervened, and both were successful. Paul Morton, secretary of the navy, and Mrs. Morton were guests of the New Yorkers at their ball.

While the governor was still a guest of the New York commissioners, a reception was given in honor of Mrs. Daniel Manning, president of the Board of Lady Managers. Empire State Day passed into the history of the Exposition distinguished for its social functions and success.

New Jersey:

Ford's old tavern at Morristown served General Washington as headquarters during a critical period in the Revolutionary War. A copy of this old public house was made to serve the New Jersey commissioners as headquarters during the Universal Exposition of 1904. This old tavern had sheltered Alexander Hamilton, Lafayette, Kosciusko, Israel Putnam and other patriots. The copy sheltered a host of Jerseymen on New Jersey Day-among them more than two-score millionaires. It was a subject of favorable comment that the music for the exercises was furnished by the English Grenadiers-the King's own band. In an atmosphere happily blending a past so illustrious with a present so harmonious, New Jersey had the good fortune to celebrate her state day, October 6.

Governor Franklin T. Murphy and stair made an official visit to the Administration building in the morning and were received by President Francis and other exposition officers. After an exchange of official courtesies, the parade formed in front of the Administration building and proceeded to the Plateau of States: First came a platoon of mounted police, then a squad of the Jefferson guard followed by General Rice, the grand marshal, and aides; battalion of Philippine scouts and band; battalion of United States marines and band; battalion of Philippine constabulary and band; 4th regiment Missouri national guard; company C, 1st regiment New York national guard; company E, 2nd regiment Michigan national guard; battery B, Ohio national guard; company K, 2nd regiment Wisconsin national guard. The parade was reviewed by Governor Murphy, President Francis and Governor Herrick of Ohio.

At the New Jersey building, Foster M. Voorhees, former governor of the state and president of the state commission, was presiding officer. The exercises began at 11:30. Mr. Voorhees first introduced President Francis who opened his address with a remark which reflected the deeper harmonies-the true spirit of the occasion.

"If we could have had, prior to 1861, one or two expositions of the character and scope of this in commemoration of the Louisiana Purchase, the Civil War of 1861-6 would not have occurred."

The chief executive of the Exposition followed these words with others of like import. He said:

"The effect of this Exposition has been to bring the people of this country closer and closer together, and they have been sufficiently bound together in one common country to insure us against any attempt whatever in the next generation and that to come - aye, forever, to sever this Union. It happens at this time that we are in the throes of a political election. There is a difference of view as to what party policy should dominate the administration of the national government for four years to come, but whatever the result of this difference of opinion it is important that when it is passed the people of this country shall accept the verdict; the man elected will be President and his policy will be the policy of the people of the United States whatever may have been their difference before the election."

Governor Murphy complimented the President of the Exposition upon the success of the Fair. The New Jersey executive spoke of the progress and development of the state and of its high rank among the states of the Union in wealth. He referred to its strides along educational lines and called attention to the fact that New Jersey was the first of the states to lend aid to the building of roads, as a result of which she has the finest system of good roads in the country.

United States Senator John Kean said he was glad of the opportunity which offered to do all that he could to aid the Exposition in celebration of so great an event as the celebration of the Purchase. Senator John F. Dryden gave a history of the acquisition of the territory, and explained the part which his state took in carrying the necessary measures through Congress.

An audience of several thousand listened to the program and gave repeated evidence of approval of the sentiments expressed. In the evening a reception was tendered Governor Murphy and staff and the two New Jersey senators at the state building.

During the day frequent compliments were passed upon the exhibit of good roads which the Garden State had installed upon the Model Street and upon its value to communities about to take up the good roads movement.

Rhode Island:

No state excelled; few equaled the little commonwealth of Rhode Island in the observance of state day. The addresses were devoid of flamboyant and literary artifice. The program was full of thought so pertinent and spontaneous as to furnish a model for similar occasions.

Governor Lucius F. C. Garvin laid the foundation of this program in a short address dealing with general principles and the satisfactory relations of his state to the Exposition.

Colonel Samuel M. Nicholson followed the governor in a review of the manufacturing industries of the state. He claimed much for Rhode Islanders as master-builders of the country, the men of inventive genius and of untiring energy who have been among the largest contributors to the country's greatness. He cited Samuel Slater who came to Rhode Island from England, founded a factory, built a complete set of machines and made the first cotton-thread spun by power in America. Today the largest cotton manufacturer in the world is in Rhode Island. The first power-loom employed in the United States was at Peace Dale in 1814. The speaker reviewed the history of the manufacture of silverware, woollens and worsteds, machine-tools, gimlet pointed screws and rubber goods. Corliss, the famous

engine builder, was a native of Rhode Island. Esek Hopkins, a Rhode Island man, was the first commodore of our infant navy. Commodore Perry, too, was from the same state. In conclusion, Colonel Nicholson summarized Rhode Island's industries and showed an annual turnover for the factories of the state of \$200,000,000.

LeBaron B. Colt, justice of the United States circuit court, was announced as the formal orator of the day. Judge Colt's oration was so masterly in thought and so exalted in character that it should find a place among the masterpieces of our common literature. He asked the question: "How shall the colonies unite in federal bonds? the Puritans of Massachusetts, the Quakers of Pennsylvania, the Catholics of Maryland, the high churchmen of New York, the Dutch Protestants of New Jersey, the Cavaliers of Virginia, the Huguenots of South Carolina, the Methodists of Georgia?" Then he proceeded to the answer. It was upon the principle of religious freedom announced by the patriots of Rhode Island one hundred and fifty years before the Revolution:

"Religious liberty was a turning point in universal history. It was the beginning of modern government. It stands in the background of every democratic struggle in Europe. In the inscription upon the tomb of Jefferson written by himself his authorship of the 'statute of Virginia for religious freedom' a century after Roger Williams is ranked next to importance to his authorship of the declaration of independence."

Continuing on this line, Judge Colt said:

"Roger Williams was the first modern statesman; Rhode Island was the first modern democracy. She was more than a century in advance of her time. For her early government there was no precedent. It was a novel experiment-an anomaly in history. The ablest statesmen and scholars of the time declared that such institutions were subversive of social order, but the principles upon which Rhode Island was founded became the cardinal principles of free government."

Judge Colt went on to say that Mr. Justice Marshall closely followed Rhode Island decisions, written seventeen years before, in construing the powers of the judiciary. "The keystone of this branch of the government resides in the power of the Supreme Court to declare what the organic law is and thus to hold in check the legislative prerogative."

The speaker concluded his long oration with these remarkable words:

"The era of constructive government is passed. The struggles of the fathers have ended. Grave questions confront us today, economic rather than political. These issues lie outside of legislation. They rest in the domain of morals. Government and laws have their limitations. They cannot make wealth without labor. If these questions seem insoluble, if the outlook appears dark, let us take courage and inspiration from the obstacles which our fathers overcame. Let the mind go back to the midnight winter of Valley Forge. Deeper than the logic of the rights of capital and labor, deeper than the academic discussion of individualism and socialism, the solutions of these questions will be found in the broad humanity, the sense of fairness and justice of the American people.

"As the nation is one and indivisible, so the people are one and indivisible. Our destiny lies bidden in the spirit which teaches that we cannot be of the rich unless we are of the poor, we cannot be of the capitalist unless we are of the wageworker, we cannot be of the North unless we are of the South, we cannot be of America unless we are of the world. This is the true American spirit which made the nation and will transmit it to our posterity. This is the realization of the great lesson which this Exposition inculcates-the unity of the human race and the ties which bind us to all mankind."

Had Rhode Island done nothing else but present such words and thoughts as these, her participation would have been creditable to herself as a state and worthy of the great Exposition.

Rhode Island observed October 6th not because it represented an historic date, but because it had been set apart for the state's day at other expositions. The parade was made in the morning from the Administration building to the Rhode Island building. It was formed in the following order: Squad of mounted police; detachment of the Jefferson

guard; Chief Marshal Rice and aides; battalion Philippine scouts and band; United States marines; battalion Philippine constabulary and band; Thirty-fourth separate company, 2nd regiment New York national guard; Battery B, Ohio national guard; company E, 2nd regiment Wisconsin national guard; Rhode Island state party in carriages; officials of the Exposition and distinguished guests.

In his address of welcome the President of the Exposition created some merriment by declaring that he, too, was a Rhode Islander-by summer residence. Robert B. Treat, president of the state commission, introduced the speakers, and George N. Kingsbury, executive commissioner, introduced the guests at the reception held at the state pavilion in the evening.

The music was furnished by the choir of the Second Baptist church and Well's band. The programs were printed on paper cut and shaped to closely imitate a Rhode Island clamshell.

Ohio:

October 6th was Ohio Day. There was no general parade but early in the afternoon the exercises began at the Ohio mansion with a review of Troop A, of Cleveland, which rode by and saluted the governor of the state. This troop served as Governor Herrick's escort and accompanied him when he paid his respects to the President of the Exposition. It was commanded by Captain Schofield. It had the distinction of having acted as escort to Presidents Hayes, Garfield and McKinley, and was guard of honor at the funeral of President McKinley. The uniforms of the troop are similar to those of the 10th British Hussars, of which King Edward was colonel. Governor Herrick was at one time an officer in the Cleveland troop.

Many thousands of buckeyes were distributed and worn in honor of the state. The simple word, Ohio, was painted on them in gold letters and they were fastened to red, white and blue ribbons. The buckeye emblem was a great favorite during the day and inspired many enthusiastic hails for Ohio and her citizens.

The program was opened with an invocation by the Reverend Dr. N. Luccock, president of the Ohio society in St. Louis. After the prayer Dr. Luccock made a few preliminary remarks in which he observed that "if it had not been for Perry's victory on Lake Erie the states of the Louisiana Purchase would have been part of Canada, and St. Louis would today be under the British flag." This ingenious introduction of the "Ohio idea," pleased the great crowd and was loudly cheered.

President Francis was introduced, and in his speech pleasantly enlarged upon the "Ohio idea." "Ohio is such a great state," said he, "that the national government at Washington could not have run its affairs if it had not been for the men which the state furnished." He gave a resume of the history of the state and mentioned the fact that the Ohio centennial of admission occurred that same year and would have been celebrated at Toledo if it had not been for the celebration at St. Louis. "Ohioans," he said, "have given much encouragement to the exposition movement." He mentioned particularly the work of Senator Mark Hanna, to whose memory he offered a tribute of respect. President Francis paid a tribute to Senator Foraker and expressed pleasure that Governor Herrick had taken a proprietary interest in the Exposition.

Governor Herrick began his speech with this significant question: "Is it surprising in all this empire-building, Ohio should look on with a feeling of pride and kinship?" And then he went on to answer: "I say kinship for Ohio is the mother-and a mighty mother she is-of this great middle West. There are now living in Indiana more than 160,000 Ohio-born people; in Illinois more than 140,000; in Iowa 90,000; in Kansas 90,000 and in Missouri more than 70,000-so when I claim this maternal relationship with the West I speak of recorded facts. And to you, men of Missouri," the governor went on, "and of the sunny South, at whose portals we stand speaking for the great mother-heart of our dear old state, I tell you that not only have all the wounds healed but the scars have been obliterated. We meet

today in this border state of that gigantic disagreement, not as friends merely, but in a closer, holler kinship under the flag that waves above us; and we thank God that it represents a united sisterhood of states standing as it does for the fairest opportunity that the world has ever known."

W. F. Burdell, president of the Ohio commission, said, "On behalf of the Ohio commission, I bid you welcome to these exercises. Some pages of the country's history belong to the Buckeye state. Even now the tiller of state is warm from the hand of the beloved and gentle McKinley who said, 'Expositions are the milestones of progress.'" General John W. Noble, of the Ohio society in St. Louis, was introduced and spoke in commendation of the work of the executive commissioner, S. B. Rankin, who selected the site of the Ohio building and had a voice in determining its architecture and general plans-all of which he praised in the highest terms. The Ohio program closed with a reception to Governor and Mrs. Herrick and the Ohio officials at the Buckingham Club.

Maine:

October 8th was Maine Day. The state commission kept open house from 2 o'clock to 4 o'clock and gave out thousands of pine cones hung as pendants to ribbons displaying the exposition colors. The grounds were fancifully and beautifully illuminated in the evening. Fairy lights in colors spelling "Maine Building" extended across the grounds, blending with the soft rays of Japanese lanterns. The building was a log hunting cabin to which the lights gave a picturesque appearance. Louis B. Goodall, chairman of the Maine commission, gave a reception to the association of hostesses in the evening, which was attended by the exposition officials, state and foreign commissioners, and a large number of invited guests. Maine Day was observed in a social rather than in a ceremonial manner. The innovation lent the charm of variety to the occasion.

CHAPTER XIII

STATE AND TERRITORIAL DAYS-CONTINUED

The Missourians—Michigan Extolled—Connecticut's Impressive Demonstration—Alaska, New Mexico and Arizona—District of Columbia Ceremonies—Nebraska and Utah—Wyoming and Florida - Secretary Taft's Address—An Official Inspection—Puerto Rico's Anniversary—A Reception Among the Exhibits

THE exercises Missouri Day, October 11th, began with a concert by the Berlin band at 9 o'clock in the Missouri building. The parade started from the Administration building at 10:30 o'clock. General John C. Bates, commanding the Northern Division of the United States Army, was grand marshal. Not since the opening day had a military parade been given on a scale larger than the one which formed in honor of Missouri Day. Four regiments of the Missouri national guard, each with its own band, were in the procession; this large number was augmented by every military company and organization on the grounds. Of the Missouri national guard in line were the 1st Regiment, Colonel Frank B. McKenna; 2nd Regiment, Colonel Harry Mitchell; 3rd Regiment, Colonel Cusil Lechtmann; 4th Regiment, Colonel William E. Springfellow; provisional battalion, Major Oliver; Light Battery A, Captain Frank M. Rumbold. Other troops in the parade were 24th Infantry U. S. Army band; Company I, 6th Infantry United States Army; 109th Company Sea Coast Artillery, United States Army; 8th Cavalry United States Army and band; 1st Company, Governor's Horse Guards, Connecticut; 1st Company, Governor's Foot Guards, Connecticut; 2nd Company, Governor's Foot Guards, Connecticut; battalion United States Marine Corps; battalion Philippine scouts and band; battalion Philippine constabulary and band; Company B, 3rd Michigan national guard.

The regiments of the national guard of Missouri made a splendid showing and were complimented upon all sides for their soldierly bearing. The line was greeted with frequent cheers along the march. The following details are from the report of the Division of Exploitation:

Missouri:

The parade was reviewed from a platform in front of the Missouri building by Governor Alexander M. Dockery, of Missouri, and staff; Governor Abiram Chamberlain, of Connecticut; Governor Aaron T. Bliss, of Michigan; the members of the Missouri state commission; General Bates and General Rice. President Francis escorted Rolls Wells, mayor of St. Louis. After the governor's salute of seventeen guns, the official party repaired to State Hall, where the exercises of the day were held.

Meantime Senor Ramon Corral, vice-president of the Republic of Mexico, and suite, and the commissioner-general from Mexico, arrived, and were conducted to seats on the platform.

M. T. Davis, president of the Missouri commission, introduced President Francis as the executive head of the Exposition, and a representative citizen of St. Louis and Missouri.

The President congratulated the state commissioners upon the results of their efforts to honor Missouri with a state day which would be a landmark in the history of expositions. Continuing, he said:

"This is a proud day for Missouri. Although I have spoken before Missouri audiences several times on these grounds, I have never been more pleased to do so than today when Missouri is celebrating. Missouri is in the center of the Louisiana Purchase, the greatest state in this wonderful territory, and St. Louis is the largest and most important city within its confines.

"Exhibits have been brought here from everywhere on the face of the globe, and every production of the skill of man in the industrial and artistic fields is represented. Everywhere upon the grounds the United States is represented, and I want to say to you that in no line is she surpassed by foreign competitors.

"Among these exhibits, those of Missouri rank with the first, and no Missourian should be afraid or ashamed to compare the exhibits of his state with either domestic or foreign displays. Do you think after seeing the position held by Missouri among her rivals in all the exposition palaces, that the \$1,000,000 appropriation was a right and just one? No one in Missouri would dare to say here today that it was not, and every man and woman knows that Missouri will be benefited many fold both educationally in a broader culture and by credit for the Exposition.

"Under the state constitution we have been called parsimonious and unprogressive, but under that constitution we have obliterated the state debt and accumulated the largest educational fund of any state in the Union, and on the smallest personal tax. Is that unprogressive? Show me one who will say that we will not maintain our past virtues, and through the Exposition will not better our modes of living and broaden our views of life."

This speech met a hearty response, and as President Francis closed with a welcome to the people of his state, applause and cheers greeted him from all sides.

The audience arose in reception of Governor Dockery. He acknowledged this compliment in fitting manner and then said:

"There is no need to ask anyone to stand up for Missouri now. It is true that we have been reproached for conservatism, but we were building wisely while scoffers laughed. They did not understand. The foundations were laid deep and strong and the wisdom of our fathers is now apparent. When speaking of Missouri, the world says: Grand, Imperial Missouri!

"But I ought not to get started on the glory of Missouri, for I would keep you here a week. I know that you want to see the Pike. But Missouri has a right to boast. She has been in controversies in the national legislature and has always been in the forefront of American thought and sentiment. She is great in her agriculture, her mineral resources, her livestock, her education, and I am proud that the Exposition is located in the greatest city in this territory. Had I the sky for a canvas and the skill of all the ancient artists, I could not put thereon the glory and triumph of this fifth state in the Union. The Almighty was in lavish mood when he created Missouri. He might have made better soil and climate and water, but he didn't, and Missouri is the crowning glory of creation. There is only one thing I want to develop, and that is state pride. Kentuckians excel us only in that; they will fight at the drop of a hat for their state, and I want Missourians to stand up for this grand old commonwealth in the same way.

"I want you to go out from here with the determination to defend Missouri against all slanderers. We may have a boodler occasionally, but we know where to keep them.

I have a hotel in Jefferson City for them, and for everyone in this hotel I can show a

million God-fearing people who are doing right."

Governor Dockery concluded his eulogium of Missouri with a stirring appeal for the Exposition and a grand tribute to St. Louis and President Francis.

Lovers of beauty found much to delight their eyes in the beautifully draped halls of the Missouri building. Flags of France, Spain, and the United States intermingling, typified the different periods of ownership through which the great territory had passed. Smilax and American beauty roses were scattered through the rooms and ornamented the white columns and balcony in the rotunda. The Berlin band, one of the finest musical organizations which visited the Fair, gave two concerts, one in the forenoon and one at the reception in the evening. In addition to the German band, the World's Fair Indian band, the 3rd Regiment band from Kansas City, the 1st, 2nd and 4th Regiments' bands and Kern's orchestra took turns in supplying music.

Thousands upon thousands of generous and wholesome sandwiches were served in the rear of the Missouri palace. A current account in one of the St. Louis papers said: "For once repeaters and butters-in were welcome, and they welcomed the sandwiches." Lemonade was freely served, and the Missouri building was not only filled with enthusiastic people during the day and evening, but it was surrounded by a great mass indeed, Missouri Day ranked as one of the leading days of the entire Fair. It came in the best month of the year to attract a crowd. The weather was perfect. Everybody was in high spirits. The atmosphere of the occasion was buoyant and the good feeling contagious. Missouri badges fluttered from the thousands of lapels, and without an accident to mar the harmony of the festivities Missouri Day took its place among the great days of the Exposition.

In the evening six hundred gallons of perfume were sprayed through the waters of the fountain and the whole house was filled with pleasant odors. Although very large, the reception was conducted admirably; it closed with a ball in State Hall.

Michigan:

Michigan Day, October 12th, was observed with a full program; official visit, parade, speaking, music, luncheon, reception-all in the shortest time consumed by any state, less than seven hours.

Excursions brought 1500 people from Michigan especially to celebrate the state's day. The exercises began shortly before 11 o'clock, and were finished about five in the afternoon, and, if rumor was right, the last yellow badge was worn from the grounds about closing time on the Pike.

Governor Aaron T. Bliss and staff and the Michigan state commissioners left the Michigan pavilion in the morning and paid their respects to President Francis, at the Administration building. At 11 o'clock President Francis joined the party, and a military parade moved from the Administration building down Louisiana Way to the Plateau of States, where his excellency, the governor, and the exposition officials reviewed the troops. The grand marshal assigned places in the parade to the Philippine scouts, constabulary and United States marines with their respective bands; the 3rd and 4th regiments, Missouri national guards, with their respective bands; Company B, 3rd Regiment Michigan national guard in command of Captain Gansser.

The exterior of the building was decorated with yellow, the state colors and with red, white and blue bunting. The interior decorations were ferns and smilax. Frederick B. Smith, president of the Michigan commission, introduced Reverend Addis Albro who offered the invocation. In his preliminary remarks, Mr. Smith gave an account of the work of the Michigan commission, of the raising of funds by subscription among the citizens of the state, of the collection and classification of the state's exhibits and of the work of the commission since the opening of the Fair. In closing, he paid a tribute to the exposition officials, and then introduced Governor Bliss as president of the day.

Harold Jarvis, of Detroit, sang a solo. Governor Bliss greeted the management of the Exposition, and in the most complimentary terms introduced President Francis, who responded by giving a review of the participation of Michigan in the Exposition; he cordially thanked the governor and his people for their interest.

Robert M. Montgomery, one of the supreme judges of the state, delivered an extended address on "Michigan and Her Resources." J. F. Bible, of the State Manufacturers' Association, supplemented Judge Montgomery's oration with a description of Michigan's industries and dwelt at length on her production of sugar-beets and manufacture of beet-root sugar. He gave figures showing the output of her wagon-making firms, the value of her annual fruit crops, the annual sales of firms engaged in making farm-machines, and of others engaged in sawing lumber, and of still others in manufacturing salt. "Michigan," said Mr. Bible, "is the salt of the Union."

Hal H. Smith made a few remarks on the lessons to be learned at the Fair. He was secretary of the Michigan state commission and had qualified himself to treat this subject.

Immediately after these exercises, Governor Bliss gave a luncheon in honor of General Rice. Mrs. Rice was honored in similar manner by the governor's wife. Then followed a formal reception in the state pavilion. The executive commissioners' association visited the reception in a body. Governor Chamberlain, of Connecticut, and staff, and Frederick W. Betts, national commissioner from the same state, called and paid their respects to the Michigan officials.

Connecticut:

Bancroft says, "There is no state in the Union, and I know not any in the world, in whose early history, if I were a citizen, I could find more of which to be proud and less which I should wish to blot," These words of the great historian were quoted Connecticut Day by Frederick A. Betts, member of the National Commission from that state. Mr. Betts had attended every state day ceremony, including dedications of the buildings; he had listened to every speech and worn the badge of every commonwealth. He was foremost in promoting Connecticut's interest in the Exposition and could speak with authority at the celebration of her state day, October 13th. Commissioner Betts raised the question whether the Exposition paid, and gave this answer:

"Aside from direct revenues, educationally, in its broadening effect, it has repaid many times the money invested. It has paid St. Louis, as a city, for her investment of \$6,000,000; it has paid the national government in bringing all the states and foreign governments under one roof and establishing a more friendly interest; it has paid the citizens of Missouri and St. Louis for their contributions by broadening the markets of the state."

In conclusion, the national commissioner alluded to the part former citizens of Connecticut had taken in conducting the affairs of the great Exposition. He mentioned Walter B. Stevens, the secretary of the Exposition, and L. F. Parker, one of the Missouri commissioners. These compliments were blended with a fine acknowledgment of the executive management of the President, David R. Francis.

The program immediately followed a parade in the morning and a review of the Governor's Foot Guards and Horse Guards in front of the Connecticut building on the Plateau of States. The parade met His Excellency, Governor Abiram Chamberlain, at the Parade entrance at 11 o'clock, and proceeded as escort to the Connecticut building. President Francis, Governor Bliss, of Michigan, and General John C. Bates, joined the official party from Connecticut and witnessed the pageant. Notwithstanding the presence of the Philippine troops and the Missouri national guard, the feature of the procession was the Connecticut guards. Here were soldiers in red coats and buff breeches, black leggings and bear-skin shakoes, drilling and maneuvering, armed and equipped exactly as the English Grenadiers at Hartford and New Haven before the Revolutionary War.

The formal exercises were opened with Charles Phelps, ex-attorney-general in the chair. Prayer was offered by Watson L. Phillips, chaplain of the 2nd Company Governor's Foot Guards. General Phelps then referred to the planting of a sprig of the Charter Oak at Connecticut dedication exercises in May, and said he hoped that it would be analogous to the planting of Connecticut citizens in St. Louis, and that a spirit of hospitality, would grow in keeping with its branches until Missouri and Connecticut would clasp hands in the friendship of common brotherhood. President Francis extended a most cordial welcome to the Connecticut people and told them in words of warmest praise about his official relations to Secretary Stevens, Commissioner Betts and Mrs. Holcombe, of the Board of Lady Managers. He, too, referred to the third generation of the Charter Oak tree planted on the lawn of the Connecticut building, and declared that the Charter Oak principles were those upon which the Exposition was founded and maintained. Frank L. Wilcox, president of the Connecticut World's Fair commission, gave an account of the participation of the state in the Exposition. Governor Chamberlain closed the program with an acknowledgment of the work of the Connecticut commission and its pleasant relations with the exposition management. "Connecticut," he said, "was noted for her spirit of progress. She gave the world the cotton-gin, the steamboat, the sewing machine, the ocean cable, the first law school, the first trans-continental railroad, and many other inventions and enterprises of great importance."

The insignia of the day was a blue badge bearing a wooden acorn at the top, with dates important in Connecticut history, printed on the ribbon. After the formal ceremonies, luncheon was served to the guests and troops in a large tent at the rear of the colonial building, typical of the ancestral homes of Connecticut gentlemen. Ex-Governor Morgan G. Bulkley, since elected to succeed General Hawley in the United States Senate, was among the spectators.

The Connecticut house was put to conspicuous use in the exposition period. In it was held the first reception on the World's Fair ground—that of the Phoenix Mutual Life Insurance Company of Hartford. Here Mr. Betts, as a member of the National Commission, frequently met his friends, and here Mrs. John M. Holcombe, member of the Board of Lady Managers, received and entertained. Toward the close of the Exposition a delightful reception was given to members of the local press.

In addition to formal ceremonies such as dedicating the building and celebrating the state's day, the house was always a rally-point for Connecticut people and their friends.

Alaska:

Alaska celebrated the thirty-seventh anniversary of its transfer from Russia to the United States October 18th.

The feature of the exercises was the unveiling of a marble bust of William H. Seward, Secretary of state at the time of the purchase of Alaska. The statue was the work of C. E. Ives, of New York. It was presented to Alaska by a life-long friend of Secretary Seward, Francis Loring, of New York City. The bust was unveiled by Governor John G. Brady and accepted by him in the name of the people of that territory. General Lovell Rousseau, a resident of St. Louis, who hoisted the first flag at the ceremonies of the transfer in 1867, was an interested and distinguished guest at the exercises. The flag which General Rousseau used in 1867 was the same which veiled the bust. All of these exercises took place in the Alaska building, famed for its collective exhibit of Alaskan products, relics and museum.

Joseph B. Marvin, resident representative, arranged the program. Reverend Dr. Nicolls offered the invocation. President Francie said:

"Many comparisons might be made between the purchase of Alaska and Louisiana. I welcome you all and most heartily congratulate you upon the great collection of exhibits showing the practical value of Alaska to the United States. Your commission has acquitted itself with great credit and added a splendid feature to the attractions of the Exposition. I

am asked many times a day if I am not tired of the World's Fair, if I will not be glad when it is over. My only regret is that there are only forty days more of the Exposition. My pleasant memories of the Fair and the pleasant people I have met, and the pleasant experiences I have had in connection with the Fair, will always remain with me and will expire only with life itself."

The President's remarks were roundly applauded by the large audience which filled not only the reception rooms, but the halls and corridors of the spacious building.

A formal address was made by Reverend G. M. Irwin, who made the journey from Juneau purposely to address the meeting. Dr. Irwin was seventy years old and was one of the best-known pioneer ministers of the Northwest. He took a deep interest in the commemorative ceremonies. George W. Parker, of the superior jury, also made an address. A quartet from the Indian school sang. The day's program closed with an organ recital by Mrs. R. R. Brown, of Juneau, in Festival Hall.

District of Columbia:

A large number of the citizens of the District of Columbia, the executives of the District government, members of the government board and the Marine band, arrived at the Exposition October 19th, to commemorate the day set apart for the District. Two buildings were utilized, the United States Government building for the reception and the Missouri state building for the ceremonies.

In the morning one of the finest military parades of the Exposition moved from the Administration building through the main picture to the Government building, where it was reviewed by the National Commission, the United States government board, the commissioners of the District of Columbia, the Board of Lady Managers, President Francis and other exposition officials, Major General John C. Bates, commanding the Northern Division, and citizens of Washington. Members of a delegation of the oldest inhabitants of Washington City were the guests of honor during the day.

The United States marine corps band headed the procession. In the line were the marine corps, battalion Philippine scouts and band, battalion Philippine constabulary and band, battalion of cavalry from Jefferson Barracks and band. Inside the Government building a reception was held. In the receiving line were the commissioners of the District of Columbia, President Francis, General Bates, and members of the government board. After the reception, a luncheon was served and the company repaired to the Missouri state building. It was estimated that over ten thousand persons were assembled about the Government building to witness the parade.

John Douglass, chairman of the committee on arrangements, presided over the ceremonies. Starting with "Stars and Stripes Forever," the Marine band, stationed in one of the galleries, gave a concert. The superb music was a feature of the afternoon and kept a large crowd in the building.

"People will appreciate the Exposition more after it is over," said President Francis. "The results will be felt for years. Members of Congress who have visited the Fair have told me that the money borrowed, the loan of \$4,600,000, would never have been returned if they had had anything to do with it. Members who were opposed to the loan seem to be the most emphatic in this position." Continuing, the President thanked the commissioners of the District of Columbia for their friendship and participation.

The president of the commissioners of the District, H. B. F. MacFarland, said: "Nothing is farther from the truth than the slander that the people of the District are grasping office-seekers, as only one-third of them hold government positions. They are not mendicants, as they have more civic pride and patriotism than the majority of the cities of the country and are not cursed by partisan politics."

Thomas H. Carter, president of the National Commission, was on the program, but

not being present, John M. Allen took his place and made a short address, complimenting the Washington people for their trip and interest in the Exposition.

William Fox, director of the bureau of American Republics, delivered the concluding speech, and the Marine band closed the program with "The Star Spangled Banner."

Utah:

Utah Day was fittingly observed October 20th at the state building, on the Plateau of States Thousands of guests who thronged the building during the day were presented with a souvenir button and enjoyed the informal hospitality that predominated in the day's observance.

Splendid decorations of flags, palms, flowers and shrubs were used to beautify the grounds and building. The decorations gave the scene a Utah significance which was emphasized by a large flag, on which was worked the coat-of-arms of the state; this flag hung over the foot of the stairway, and visitors were required to pass under it.

Commissioner-General S. T. Whitaker, and his assistants, acted as a committee on reception. Those whom they received included four trainloads of excursionists from Ogden and Salt Lake City. Among the excursionists were C. F. Middleton, of Ogden, a high officer of the Mormon Church and a practical philanthropist; Judge Bartsch and Judge Shurtliff, of the Utah Supreme Court, and James T. Lynch, of Salt Lake City, were also in the delegation. Some of these visitors for Utah Day had been pioneers in the West. They had crossed the plains in ox-carts, fought off the attacks of Indians and endured the privations of the desert. Several of them had founded cities. Judge Shurtliff had been an Indian interpreter, guide and scout over the old Lewis and Clark trail; Middleton had been a pioneer and was the founder of the City of Ogden. All of these men were thoroughly versed in the history of the Purchase, and on Utah Day they recalled and recounted their adventures on the frontier in the western section of the territory.

While the observance of Utah Day was not conventional, it was lacking neither in value to the state nor in interest to the exposition.

Nebraska:

On October 15, 1854, a bill which provided for the organization of the territory of Nebraska, passed Congress, and was immediately approved. Pending the passage of the Nebraska bill, Congress reviewed the question of African slavery in a debate so able, animated and exhaustive, that it will maintain a fixed place in the history of parliamentary bodies. It was an easy matter for Nebraskans to agree upon October 25th as their state day at the Exposition, and several thousand of them came to make the celebration worthy of a progressive state.

Governor John H. Mickey, and staff, arrived in the morning, and proceeded to the Administration building where they were received by President David R. Francis and the exposition officials. Luncheon was served at the East Pavilion, and the exercises of the day were held in Festival Hall.

Chancellor E. Benjamin Andrews, of the University of Nebraska, offered prayer, and the president of the state commission, Gurdon W. Wattles, introduced the speakers.

In his address of welcome, President Francis said that he visited the Omaha Exposition of 1898, and there made his beginning in the exposition business. He told the Nebraskans that they should be proud of the fact that Nebraska Day was selected for the first successful trial of the Baldwin airship. He also told of the prizes offered and set forth the advantages which a successful navigation of the air would bring to the world.

In his reply, Governor Mickey remarked:

"The close reader has observed that the great events of history have turned upon very small pivots. The stratagem of a wooden horn raised the siege of Troy, and the smile of a

king's favorite changed the map of the world. It was Napoleon's pressing demand for ready money that induced him to part with Louisiana, and, with that transfer, there passed from France, forever, the grandest heritage she ever possessed."

Governor Mickey paid a high tribute to the Exposition and complimented the commission from his state for its showing. Mr. Wattles, who had been president of the Trans-Mississippi Exposition, read a brief paper upon Nebraska and its relation to the Louisiana Purchase. In addition to music furnished by Omaha singers, an orchestra from the Visayan Village was in attendance and entertained the Nebraskans. John L. Webster, of Omaha, delivered an oration.

This state equipped a pavilion in the Palace of Agriculture and daily attracted throngs of people with a series of moving pictures, showing the industries of the state. After the exercises of the day, a carload of Nebraska apples was distributed at this pavilion.

New Mexico:

The last state or territorial day was November 19th. It was the anniversary of General Phil Kearny's taking formal possession of the territory of the Southwest, hence New Mexico appropriated this date for her territory day. It was the last assignment to a state or territory in the exposition period. The parade formed in the morning in front of the New Mexico building and moved to the Administration building in the following order: Platoon of mounted police; squad Jefferson guard; battalion Philippine scouts and band; battalion Philippine constabulary and band; Governor Miguel A. Otero and party in carriages.

After the official call on President Francis, the parade reformed and counter marched to the pavilion of the territory. This building was decorated with Navajo blankets, squaw cloth, Spanish leather and ornamented with fine old mahogany relics from Jesuit days.

Charles A. Spiess, president of the territorial commission, introduced the speaker. Addresses were made by President Francis, Governor Otero, Judge John R. McFie, of the Supreme Court of New Mexico, and Matthew G. Reynolds, of St. Louis.

The commissioners tendered a reception to Governor Otero in the evening. Miss Anne Hitchcock, daughter of the secretary of the interior, assisted in extending the honors of the day.

Arizona:

Arizona did not ask for a parade and ceremony on a special day. The territory provided and maintained a building on the Plateau of States, in which informal receptions and reunions of Arizona people were held. Governor Alexander O. Brodie made an official call upon the exposition officials November 21st and was received by the Arizona commissioners at their pavilion.

Governor Brodie helped to organize the Rough Riders and was a major in the regiment. His reception at the Exposition was extremely cordial.

Wyoming:

Governor Fennimore Chatterton, and staff, were present Wyoming Day, July 11th. The state officers, speakers and members of the commission were escorted from the Wyoming headquarters in the Palace of Mines and Metallurgy to the Hall of Congresses by the Second Illinois national guard and band. The regiment in full strength was in line. This regiment is a Chicago organization and has seen much duty; it made a fine showing. The Indian band from the Indian school formed part of the escort. The Wyoming commission expressed

themselves as well pleased with the courtesy shown to them on their state clay.

At the Hall of Congresses the program was:

Music by band.

Address of welcome by President Francis.

Response to President's address by B. B. Brooke, president of the Wyoming state commission.
Plano solo, Rhapsodie Hongroise. Mrs. Mary Slavins Clark, of school of music,
University of Wyoming.

Address by Governor Chatterton; subject. "Wyoming."

Song. "Wyoming;" words by C. E. Winter, music by E. A. Clemmons; sung by Miss Savilla King, of Casper, Wyoming.

Address by S. T. Corn, chief justice, supreme court, Wyoming; subject, "The Evolution of the State."

Music by the Indian band.

Address by J. M. Carey; subject, "Possibilities of Wyoming as a State."

Music by band Second Illinois National Guard.

Address by H. A. Coffeen; subject, "Wyoming and the West."

In the evening the commissioners tendered a reception in favor of Governor Chatterton at the Inside Inn. The reception was attended by the state and foreign commissioners and the officials of the Exposition and visitors from the State of Wyoming to the number of two thousand.

July 11th was the fourteenth anniversary of Wyoming's statehood.

Florida:

The ceremonies of Florida Day consisted of speeches and a smoker. At 3 o'clock July 2nd, Samuel Pasco, United States senator, called the assembled Floridians to order in the Hall of Congresses, and introduced Reverend W. A. Hobson, of Jacksonville, who offered prayer. Judge Franklin Ferries delivered the address of welcome. He apologized for the absence of the President, who had been called to a prior engagement. He invited the Floridians to make the Exposition their home as long as they remained in the city, and closed with a tribute to the state of sunshine and summer.

Captain Charles E. Garner, president of the Jacksonville board of trade, responded to Judge Ferris' address. Among other things he said:

"Relative to our state not being represented here with a legislative appropriation it is a matter of deep regret. I wish in behalf of the commercial organization that I represent to say that the fact that Florida is not represented officially is due to no lack of effort on our part or the management of the World's Fair."

Captain Garner showed that he fully appreciated the close historic relations between Florida and the Louisiana Purchase.

Brief addresses were delivered by Colonel A. D. Covington, president of the Turpentine Operators' Association; by P. L. Sutherland, of Jacksonville, and Colonel A. S. Mann, vice-president of Good Roads' association.

The smoker was held in the evening at the Hamilton hotel.

Philippine Day:

August 13th was the sixth anniversary of the fall of Manila. This made it appropriate for Philippine Day. Festival days have individuality and character-an atmosphere all their own. The air of Philippine Day was military. William H. Taft, secretary of war, was the guest of honor. On the reviewing stand were General Wesley Merritt; General Charles King, president of the national society of the Army of the Philippines; General J. F. Bell,

superintendent of staff; General H. J. Smith; General Owen S. Summers; General John C. Bates; General Francis Green; General Lloyd Wheaton; General James R. Campbell; General Frank P. Baldwin; Colonel Clarence R. Edwards, chief of the bureau of insular affairs, war department.

It is said that so many eminent military officers have seldom met in this country outside of the National Capital.

The military parade was strong and thoroughly representative of the army. There were three divisions:

First Division:

Platoon of mounted police. Jefferson Guard.
Battalion Philippine Scouts and band.
Company I, Sixth Infantry, United States Army.
119th Company, Sea Coast Artillery.
Battalion United States Marines.
Squadron Eighth Regiment Cavalry, United States Army, and band.
Secretary of War and official party in carriages.

Second Division:

Battalion Philippine Constabulary and band.
Fifth Ohio National Guard and band.
Spalding Grays and band.
Battalion Culver Naval School and band.

Third Division:

Mexican Artillery band.
Society Army of the Philippines.
Well's band.
Spanish American War Veterans.
Distinguished citizens in carriages.

The line of march was from Parade entrance via the Administration building to the Philippine grounds where the column was reviewed by President David R. Francis and other exposition officials, the Philippine exposition board, the honorary Philippine exposition board, and the army officers. As the anniversary of the fall of Manila it was esteemed especially appropriate that there should be in attendance the first civil governor of the islands, the native Philippine board and the veterans in the war on the islands and Spanish American veterans, who made the acquisition of the Philippines possible. Many of the Philippine soldiers now in the service of the United States had fought in the ranks of the insurgents. Here was a great military demonstration whose distinguished air was that of peace. In a composite community of half a dozen different peoples ranging in intelligence from the head-hunter to the civilized islander of Spanish culture and character was this festival of peace, a festival covering thirty acres and showing phases of tribal life never before seen in Europe or America. Malayan savagery in native form and habitation joined with the rites and ceremonies of the sultan, the rich products of the Philippine planter joined with the still richer merchandise of the Manila shopkeeper, displayed in buildings of a strange architecture, gave the setting to this "pomp and circumstance of war"-this festival of peace.

Dr. W. P. Wilson, president of the Philippine exposition board, had charge of the exercises and, as soon as the parade disbanded, introduced Secretary Taft, who was speaker of the day. The secretary began by making a pleasant allusion to President Francis, and recalled the observation of Sydney Smith, who, upon seeing Daniel Webster for the first time, remarked, "What an engine in breeches!" Continuing, the secretary said:

"It is a source of infinite satisfaction for me to look about over this thirty acres that embrace the Philippine exhibit and to think of the immense good that it has done and will do in making the people of the United States acquainted with the Philippine islands, and making the people of the Philippine islands acquainted with the United States. Here is shown scientifically all that could be shown in the exhibition of the agricultural, mineral,

educational, ethnological and horticultural resources of these vastly rich islands-the pearls of the Pacific.

"This Exposition has cost much money, considerably more than was expected when the bill was passed authorizing it to be made. The Philippine treasury has many calls upon it, and the revenues have fallen off because of the commercial distress in the islands, and yet with all that I feel that the money which has been expended will inure many fold to the benefit of the Philippine islands in the invitation which is here presented to American enterprise and American goodwill to aid the Philippine people in their struggle onward and upward to a higher and more progressive civilization and prosperity. Much is now dependent upon legislation by Congress. We need the active assistance of the Philippine government within the islands to secure the construction of the railroads that are absolutely necessary to the development of these islands for the education and elevation of the people.

"The Philippines need and will secure from Congress legislation which will bring the Philippine market within the tariff wall and enable the Philippine farmers to sell in the richer market of the United States the products of their far-distant lands."

The secretary thought it was very fortunate that the Philippine board of honorary commissioners was at the Exposition and spoke in laudatory terms of the work of the Philippine exposition board and its assistants.

Brigadier-General Irving Hale, first president of the Society of the Army of the Philippines, made a short address and eulogized the work of the American soldier; he also spoke in compliment of the Filipinos who were loyal and awake to the advantages before them.

John M. Allen, member of the National Commission, prefaced his remarks with several humorous allusions which delighted the crowd. Continuing, he said:

"In all seriousness, however, I wish to say, and I speak as the representative of the National Commission, that we have only commiseration for those citizens of the United States who, being able to afford a trip to this Exposition, fail to take advantage of it. Such citizens are laying up stores of regret which they will feel all their future lives."

The address of Senior Benite Legardo was anticipated with extraordinary interest. Senior Legardo was president of the board of honorary Philippine commissioners, which was in large measure representative of the real sentiment of the islanders toward the policy of the United States. He was greeted with applause; upon vital points of his address, he said:

"Among all people who cherish their honor and dignity there is one day of glory wherein they commemorate and perpetuate the memory of some brilliant act. Your day is the Fourth of July, on which you celebrate your glorious independence. We have not yet such a day as this, but we have this day-the 13th of August, on which to commemorate our political redemption, for on this day the army under General Merritt took possession of and raised for the first time upon the ancient fortification of the city of Manila the glorious American flag. We commemorate at the same time the triumph so signally won by the noble and intrepid Admiral Dewey, who obtained for America and for himself the laurels of a complete victory over Spanish arms. All praise and glory for these heroes, an eternal peace to those who succumbed defending the ideals of their flag.

"We shall, however, never consider that redemption complete until we enjoy the privilege of self-government. By self-government I do not necessarily mean independence; but, as conditions warrant, an increasing home-rule-autonomy-under or part of the government of the United States. Up to the present we believe that we have been given as much home-rule as practical."

It will be conceded alike by those who approve and by those who disapprove that this was a most masterly statement of a position. That address, not only by reason of the circumstances under which it was delivered, but by reason of its inherent value, should not escape the attention of the statesman. President Francis said:

"Great credit must be given to Secretary Taft for the Philippine Exposition as it now stands. No other nation had ever brought such a collection of people and exhibits over 17,000 miles of sea, and, irrespective of policies, no man would deny the duty of the country

to take up the white man's burden- in this instance."

After the formal exercises luncheon was served in the Cafe Luzon.

Then came an official visit to the villages. All of the natives were in gala attire for the inspection, and special programs were given at each. The secretary of war was introduced to the notables, who received him with great ceremony and punctilio. Antonio, the Igorot chieftain, fresh from his triumphs at Washington, renewed his acquaintance with the secretary and delivered himself of a neat speech of welcome. All the exhibit buildings were visited, and the tour ended with a dress parade review of the Philippine troops. In the evening a sham battle, representing a night attack on one of the camps, was given. In the evening President Francis tendered a dinner to Secretary Taft and official party, and the Philippine officials.

Puerto Rico:

July 26th is the anniversary of the evacuation of Puerto Rico by the Spanish army and the occupation by the American army. Properly July 26th suggested itself as Porto Rico Day.

From ten o'clock in the morning until six o'clock in the evening a stream of visitors poured into section 118 in the palace of Agriculture in which the exhibit of the province was installed. In the lower part of the section a long table was placed and as many as could find places were seated to enjoy the cups of Puerto Rico coffee generously and freely served.

The exhibits in the section showed wines, hats, canes, tobacco, coffee, fruits, manufactured products and artistic handiwork of the inhabitants. These products were specially arranged for the afternoon, and space decorated with flags and bunting. Several Puerto Rico teachers were present and demonstrated the work of the schools.

In another part of the section a reception was held. Ices, cakes and coffee were served, and each guest was presented with a badge. The guests were received by Jaime Annexy, president of the Puerto Rico commission, and Mrs. Annexy, assisted by the other commissioners. President Francis called and formally extended the welcome of the Exposition. Among the guests were General Rivera, who served ten years in the Puerto Rico army, and Major W. H. Johnston, commandant of the Philippine scouts, who served on the island in the Spanish-American war.

CHAPTER XIV

THE CLOSING DAY

Committee on Ceremonies in Charge—A Program in Honor of President Francis—Escorted to Louisiana Purchase Monument—Addresses by the Governor of Missouri and the Mayor of Saint Louis—President Francis' Reply—A Congress of all Nations—Farewell Demonstrations on The Plaza

THE following account of the closing day of the Exposition is from the report of the Committee on Ceremonies:

The inauguration ceremonies of the great Exposition closed with a dignity as impressive and unconscious as the language of the ancient Psalmist.

Into the last ceremony of the last day came a kindred sentiment.

"Farewell, a long farewell, to all thy greatness;" the spirit of December let answered back to the spirit of April 30th, "Open ye gates. Swing wide ye portals. Enter ye sons of men and behold the achievements of your race."

The President of the Exposition spoke these words—a promise and a culmination. Such words are responsive only to great and rare occasions. Simple they are but not commonplace, exalted but not patrician. They may bewilder the sage, but they are plain to a child; they touch the human soul in its profoundest depths.

The Louisiana Purchase Exposition closed at midnight, December 1, 1904. It was "Francis Day," in honor of the President of the greatest of all world's fairs. None was too poor to participate in honoring him. The rich and the poor vied with each other. From early morn till midnight the thousands of St. Louis' hosts gathered to pay him homage, for the city had awakened at last to the fact that while it had been feting and honoring its guests there remained the host of hosts to be honored. It was the merriest day, yet the saddest, of the year. Many made merry as if at a carnival, yet many were sad because of the parting. All, however, joined in the throng that paid the just debt of gratitude to the man of all.

From the moment that President Francis left his residence, escorted by First Vice-President Corwin H. Spencer, Mayor Wells and the Board of Directors of the Exposition, until the solemn moment be performed the last ceremony that made the great Exposition a thing of the past, he was the recipient of a continuous succession of personal ovations equaled only by those enjoyed by President Roosevelt on the day of his visit. Certainly no St. Louisan ever before received the honors accorded David R. Francis.

The day was propitious, and the populace was en rapport. The poor of the city were admitted free. All of the business houses closed, and thousands poured through the gates to see the ending of the great Exposition and to pay honor to its chief promoter and executive.

November 29th, Governor Dockery of Missouri issued a proclamation, in which the concluding paragraph recited: "In view, therefore, of the foregoing, I, Alexander M. Dockery, governor of Missouri, do hereby request the people, so far as may be practicable, to abstain from their usual vocations on Thursday, December 1, 1904, and attend the

closing exercises of the World's Fair."

On the same date the mayor of St. Louis issued a proclamation declaring Francis Day a public holiday, urging the residents of the city to suspend business and closing the public offices, in order that all citizens might participate in the closing ceremonies.

In the formal ceremonies of the day, which took place on the selfsame spot where seven months before President Francis acting as host had declared the gates of the Exposition formally opened to the world, he was now the guest to whom the governor or the state, the mayor of the city, and thousands of his fellow-citizens, had gathered to pay tribute.

It was such a day almost as the opening of the Exposition had witnessed. A bright sun that glinted the roofs and gilded points of statues in the picture took the edge off the chill atmosphere. It was a civic holiday as well and holiday-makers from city and state began to make the Fair their objective point early in the day.

The busiest day of his busy life opened for President Francis at 9 o'clock in the morning. At that hour Mayor Wells and members of the World's Fair committees called at the Maryland avenue residence of the President to act as an escort to the Fair. The trip to the Exposition was made in a private trolley-car.

The car stopped at the Administration entrance. Just inside the gates an escort of the Jefferson guard under command of Lieutenant-Colonel Fountain, commandant, was drawn up. As the President passed through the gates into the grounds the guards saluted and closing ranks became his escort for the trip to his office in the Administration building.

Official Honors:

Brigadier-General Rice, marshal of the Fair, in full uniform formed the column with Mayor Wells and First Vice-President Spencer at its head. Following them came Director of Exhibits Skill, Director of Exploitation Stevens, Director of Works Taylor, Director of Concessions and Admissions Gregg, and members of the Executive, Ceremonies, and Reception and Entertainment committees. The walk to the Administration building was along a lane of Jefferson guards who lined either side of the broad pavement in the center of Administration Avenue. As the party passed the guards, who stood at attention, lifted their white-gloved hands up to their caps in military salute.

Crowding the roadway on either side of the walls of Jefferson guards were thousands of people who cheered as the President passed up the walk. With his hat in his hand, he bowed to the right and to the left in acknowledgment of the salutations of the throng.

As the column reached the foot of the long flight of granite steps leading up to the main entrance of the Administration building, and started to ascend, there was a crash of music and the band of the Sixteenth Infantry, stationed in the archway or the building, played "Hail to the Chief."

Through the crowds the escort led the way down the corridors of the Administration building and up to the office of the President on the second floor.

The stairway leading to the second floor and the corridor just outside the President's office were made beautiful by bunting in the national and exposition colors and by potted plants and flowers.

The great bay window on the landing of the staircase was screened by plants and silken colors and over the center hung a large medallion bearing the bust of Mr. Francis in relief.

The corridor to the swinging doors of the office was covered with bunting and banked with palms and potted plants. The interior of the beautiful office was made a bower of beauty.

Red and white roses, carnations, palms, evergreens and smilax were everywhere in profusion. Over the east window of the office hung the flag of Kentucky, the native state of Mr. Francis. On another wall hung the seal of Missouri his adopted state, and on other walls were the fleur-de-lis and colors of the Exposition and a portrait of the President.

The decorations were the work of his associates and the officials of the Exposition, done unknown to President Francis.

Following a short rest in his office, during which several foreign officials called to offer their congratulations, the march to the Plaza St. Louis was taken up for the formal exercises.

During the wait for the ceremonies of the day the Sixteenth Infantry band rendered music and the regiment drilled on the Plaza St. Louis for the entertainment of the crowd.

As an escort on the march to the monument the President had bodies of military and civilians. The first consisted of a military division including the Sixteenth infantry, under Colonel Price, a detachment of the Jefferson guard, the Philippine Scouts, and one company of United States marines under Captain Williams.

With his civilian escort consisting of the Directors, officials and employees of the Exposition, with foreign and state commissioners all in conventional morning dress, President Francis followed.

It was a holiday at the Administration building as it was in the city. With flags flying, the bands playing, and the measured tread of soldiery, the escort moved down the broad Louisiana Way to the base of the Louisiana Monument.

A roar of applause went up from at least 25,000 throats when the party appeared. A cordon of guards kept a clear space in front of the monument for the members of the escort, and as the monument was reached the members fell back and allowed the guest of honor to proceed alone to the foot of the monument.

The exercises took place from the rostrum on the north side of the monument. Corwin H. Spencer, First Vice-President of the World's Fair, presided, and after calling the assemblage to order introduced Mayor Wells as the presiding officer of the exercises.

Mayor Wells' Tribute:

Mayor Wells closed his introductory with the following:

"I voice the sentiment of this community when I speak with appreciation of the disinterested labor that has been so well performed by all connected with the management and conduct of this enterprise.

"Above all we admire and applaud the forcible leadership of our President, David R. Francie, under whose ceaseless energy, courteous demeanor and superior intelligence success has been achieved. His memory will be perpetuated as long as history remains to tell the story of the glory that herein has been created.

"When our forefathers founded the village of St. Louis, they could not have anticipated that an exposition would be conducted within its limits with such grandeur and beauty as the world never before witnessed. They could not have foreseen that here would be displayed in the colossal palaces that surround us the product of the energy of men from every clime. They could not have imagined that within these boundaries would congregate at one time representative men from all civilized nations of the world, assembled in harmony and good fellowship, with peace and good will to all men-for which all nations are our debtors, and we are the debtor of all nations that gave their sanction and assistance to this glorious achievement.

"It is evident that the Louisiana Purchase Exposition has not lived in vain but has been a joy and benefit to all who may have been so fortunate as to have been within its sway.

"The allotted time for its existence is fast drawing to a close. After the toll of this midnight bell its grandeur and beauty will begin to fade. Well may we all exclaim: 'Long

live the joys and influence resulting from the Louisiana Purchase Exposition!’ Long live David R. Francis, whom I now present to this audience.”

When it came time for the man of the hour in whose honor all of these exercises were held and all of the great throng had gathered, Mayor Wells turned to the spot where President Francis sat. Hardly had the mayor’s introductory words been spoken when the vast crowd responded and against the long facades of the palaces lining the plaza was hurled a volume of plaudits such as had been heard there but once before.

It was a roar of welcome, of recognition, of thanks and of tribute to the executive whose untiring energy and resourceful talents had brought the great enterprise through the long dark night into a bright morning of success and triumph. It lasted fully three minutes, and at times when it seemed that it was at an end some leatherlunged enthusiast gave it a new lease with an extra lusty hurrah which started it anew.

Through it all the President, who had not knocked in vain at the palace gates of kings and emperors and brushed aside the traditions and etiquette of courts for the sake of his beloved work, stood with his head bowed down and a flush on his cheeks.

Hats were off and flying through the air, while cheer on cheer filled the air, and it seemed that the people would never stop for breath. During the glad acclaim the band started the ever-ready “Hall to the Chief,” and this selection was received with added uproar.

The President’s Address:

When the memorable tribute had ceased, and the crowd was silent, the President made his response in a speech every word of which was plainly from the heart. President Francis’ speech follows:

“I am dazed, if not dumb, from the manifestations and expressions of this day. The manner in which the people of St. Louis have united with practical unanimity to honor me is more surprising because of the sense of unworthiness with which I am imbued. With what I trust is not unbecoming modesty, I acknowledge my unspeakable obligation and am sure you will not consider me wanting in appreciation when I say that the designation of this as Francis Day is intended chiefly as an indication of your estimate of the Exposition and as a tribute to the men whose unselfish labors for the success of this work has inspired you with respect and gratitude.

“That the governor of this commonwealth and the mayor of this city should issue proclamations calling upon the people to abstain from their usual occupations; that the public and parochial and private schools should declare a holiday; that the marts of trade, the financial institutions and the commercial interests of a cosmopolitan city should close their doors are susceptible of no meaning other than that an intelligent people desire to show the value they place upon an undertaking whose beneficial and far-reaching results are beyond calculation.

“While I cannot feel that any services I may have rendered merit the need of praise you have conferred upon me, I do not question the sincerity of your expressions, but at the same time you must believe me when I say that your estimate of my services is far, very far, in excess of the work I have performed. An enterprise of this magnitude could only be accomplished by the united efforts of patriotic men working in harmony for a common end and making the achievement thereof paramount to any personal aggrandizement or selfish object. The Directors of the Exposition, the heads of its grand divisions, the chiefs of its departments, the commissions and boards representing the federal government, the foreign countries and the states of the Union participating in the Exposition have cooperated in the exploitation, installation and operation of a universal exposition which seems to have risen to the full measure of the ambitious plan upon which it was organized.

"It has been a serious work. All who have been engaged in it have been mindful of its import and striven to perform their share, realizing that any dereliction on the part of one not only affected the labors of others, but would impair the perfection or the whole. The helpfulness and consideration invariably extended to the highest official was a natural outgrowth of fidelity to an undertaking, for the success of which all co-workers cherished a deep responsibility.

"I would be derelict in the proprieties of this occasion as well as untrue to my own feelings, if I failed to make special mention of one whom sickness prevents from participating in the ceremonies of this day. I allude to our treasurer, W. H. Thompson, whose many qualities of head and heart are as indescribable as the inestimable services he has rendered this enterprise. May he soon be restored to health and strength.

"The results of this work cannot be adequately measured by the beauty of its landscapes, the grace and symmetry of its buildings, the comprehensiveness of its exhibits, the intelligence of its congresses, the elegance of its social features, nor by the ineffable pleasures conferred upon its patrons; but time will be required to demonstrate that the thought and the labor and the sacrifices that have entered into it were not ill-advisedly bestowed. The compensation will continue to flow for at least a generation to come. Its influence will be felt and appreciated in widening circles as the years go by. It marks a new epoch in the intellectual and industrial advancement of the world and the dawn of a new era in the international relations of governments and of peoples. It is a credit for any state to have had such a gathering within its borders and a glory to any city to have been the scene of such an assembling. It has brought all countries closer together and has elevated the world.

"Those who have been engaged in the work will never cease to look back to it with pride. All who have shared in the spirit of the undertaking have had their views enlightened, their tastes cultivated, and their sympathies broadened. The millions of visitors who have entered these gates have, by their presence, encouraged this band of workers, and, let us hope, have taken away pleasant recollections of their experiences.

"The distinguished guests, whom we have entertained, have by their words of encouragement and manifestations of interest lightened our labors and incited us to renewed efforts. All who have come have contributed toward the consummation of an undertaking upon which this outpouring of people at the end of the task stamps the approval of the people of St. Louis and of Missouri.

"Speaking of myself, it has been the work of my life. The duties of the position I have held have not only claimed my entire time and thought, not having failed to be on the grounds from six to fourteen hours each and every day since the opening, May 1st, last, but the performance of these duties has been so pregnant with pleasure and interest that it dispelled all feeling of weariness, and its cessation will seem like the severing of beloved ties, the departure from scenes endeared by cherished association.

"I tender you sincere thanks for this manifestation of your good will, which I shall ever hold in sweet remembrance. To serve our fellows with all of the strength and ability granted to us is a duty the discharge of which is of itself sufficient reward. Those who can feel that their efforts have been devoted to the uplifting and the welfare of humanity are ever filled with a sense of regret that they could not have accomplished more. But, "lest we forget," let us unite in expressing our gratitude to Almighty God, that throughout this work in which we have been engaged He has spared us from pestilence, preserved our health and strength and blessed us with prosperity. May this enterprise, with which we have been connected for nearly seven years past bring into still closer brotherhood all the nations and all of the peoples who have participated in it. May it deepen our patriotism. May it strengthen our love for a benign Providence that smiled upon us."

Governor Dockery's Congratulations:

Governor Dockery who awaited the coming of President Francis and his party at the monument then delivered a speech, which he avowed was an impromptu effort, but which was acknowledged to have been one of the best of many that the state's chief executive had delivered during the World's Fair.

When the governor, in speaking of the guest of the day, termed President Francis the "executive genius who made the Fair," a shout of corroboration went up from the crowd. When he mentioned the part played in the successes of the Fair by the officials and directors and others, another roar of applause followed from the throng.

And when the governor mentioned in a friendly and appreciative way the name of the President of the United States, President Francis was the first to lift his hat and lead the mighty cheering that followed the mention of Roosevelt's name.

In eloquent terms the governor entered into an analysis of the significance of the World's Fair to the people of the state, the city, and the nation. Its first and greatest lesson, he said, was that the United States is the greatest nation in all the world, and to every foreigner who had visited the Fair this lesson had been made evident in such a way that it was obvious, and its truth would be lasting.

Turning to the foreign commissioners gathered about the monument, he warned that the commercial supremacy of the United States would soon have to be acknowledged by all nations; that it was out on a war of peaceful conquest through the channels of trade and that there would be no cessation of the struggle until many a powerful commercial foe had been vanquished.

Liberal applause greeted the patriotic boast of the governor, who followed it with a tribute of appreciation to the people of Missouri who had given for the Fair \$1,000,000 and to the people of St. Louis who had given a ten-fold sum. These he called great and glorious feats and congratulated an age upon communities so unselfishly alive to progress.

Governor Dockery's speech lasted about a quarter of an hour, and when he had finished the crowd cheered with a hearty will.

Festus J. Wade, on behalf of the Board of Directors, presented to President Francis a superb dinner service of silver.

A similar silver dinner service was presented to Treasurer William H. Thompson. The latter not being present because of illness, the response was made by President Francis for him. Reverend Doctor S. J. Niccolls offered prayer and this ended the formal exercises of Francia Day.

After the exercises a polyglot throng of the tribes and nations of the earth represented at the Fair assembled upon the wide plaza in a farewell congress. All the motley throng of the Pike, and of the anthropology villages, Pygmies, Patagonians, Ainus and Indians, Moros, Igorrotes, Visayans, men and women from the East and the West, the North and the South, from the four corners of the earth, and from across its seven seas, joined in a parade and marched for the last time around the red walks of the Plaza St. Louis.

Farewell of the Commissioners-General:

Shortly after three o'clock the foreign commissioners to the World's Fair marched to the Administration building in a body, walking two abreast with the dean of the corps, Commissioner-General A. R. Nuncio, of Mexico, at their head.

They filed into the office of President Francis. Commissioner-General Nuncio stepped forward and made a brief address in which he felicitated President Francis on the day. He said that the foreign commissioners to the World's Fair had called to pay

their respects to the President of the Exposition, and united in testifying to the always pleasant relations that had existed between the head of the World's Fair and the foreign commissioners.

Doctor Theodor Lewald, commissioner-general for Germany, followed and in a feeling manner spoke of the greatness of the Exposition, the unfailing courtesy of the President and of the great success, which in so large a measure was due to President Francis.

In response, President Francis spoke of the great debt the Exposition owed to the foreign countries there represented for much of the success and grandeur. He dwelt with pleasure on the satisfactory and friendly relations that had marked the intercourse of the Exposition with the representatives of the foreign governments participating in the World's Fair.

Most satisfying results had been achieved by the Exposition, President Francis said, but assuredly these results could not have been achieved had the foreign representatives, chosen to carry out the plans of the governments, been of a different stamp of men.

The Lady Managers' Reception:

At five o'clock the office of the President was deserted for the parlors of the Board of Lady Managers, who gave a reception for the President. Thither he and the Board of Directors and many of the foreign commissioners repaired and a large throng assembled in the beautiful salons.

Following the reception, President Francis and the Board of Directors mounted the Yellowstone Park coach for a trip through the grounds. It was dusk when the coach bowled along the smooth avenues of the Exposition but everywhere the coach was recognized by the crowds and everywhere cheers and applause were its accompaniment.

President Francis was the guest at dinner of Vice-President Spencer at the Tyrolean Alps. The dinner was given in the center of the main dining hall of the Alps. There were a dozen guests and they accompanied President Francis to the Alps.

At the entrance an immense throng had gathered and packed the way so that it was impossible for the party to enter. It was necessary for mounted police to clear a passage for the diners.

The main dining hall was crowded as it never was before and as the exposition party entered President Francis was recognized by those already in the dining room. In a moment they were on their feet cheering for the man of the hour.

The table was set in the exact center of the large room. At its head sat Mr. Spencer, Mr. Francis to his right and Mayor Wells to his left. William H. Lee sat opposite Mr. Spencer at the other end of the table. The other guests were General S. B. M. Young, Judge Franklin Ferriss, George J. Tansey, George M. Wright, J. C. Van Blarcom, Finis E. Marshall, J. G. Butler and L. D. Dozier.

During the intermission of the orchestra there were calls for a speech from President Francis, which became so loud and persistent that he was finally obliged to address the throng.

He spoke of his appreciation of the demonstration and of the good feeling which prompted it, and mentioned his own feelings of regret in the midst of his pleasure over the kindly testimonial of his fellow-citizens, at the imminent approach of the end of the Exposition. He said he felt sure that all present must share in the wish to which he owned that if it were possible the Exposition continue another year.

When the President had finished speaking there were cheers and a tiger for Francis, and almost before they had died down a quartet in the gallery sang several songs, among them "Auld Lang Syne" and "He's a Jolly Good Fellow."

The Midnight Scene:

The Plaza St. Louis was the scene of the impressive closing ceremony at midnight. The Louisiana Purchase Monument was gaily decorated with strings of red lights from the top to the bottom. The rostrum was surrounded with red, white and blue bunting. An electric switch controlled every light on the Exposition grounds.

As the hour for the ceremony approached the crowd collected about the monument. President Francis and party, composed of Mrs. Francis, Corwin H. Spencer, Director of Works Isaac S. Taylor, Secretary Stevens, and other members of the Board of Directors, arrived at the stand at 11:30.

When President Francis appeared, he was given a mighty ovation by the assembled crowd. He approached the front of the stand and began a short address by saying, "I am about to perform a heartrending duty." He was visibly affected and his voice trembled with emotion. Continuing, he compared what he was about to do with sacrifices that were counted necessary duties.

Waving his hand toward the beautiful display of the palaces glimmering with their hundreds of thousands of electric lights, he said he wished they might live forever as a testimonial to the stupendous work accomplished by those responsible for their creation.

When President Francis turned and putting his hand on the arm of Mrs. Francis who stood by his side, said, "Here stands the partner of my life," the crowd went wild and kept up continuous applause for fully two minutes. Continuing, he said, "Mrs. Francis and I have been blessed with six sons. If we were called to lose one of them tomorrow the only consolation I could find would be the record he left behind him. So, when we are called upon to lose our great Exposition, the only consolation left us is the record it leaves behind it." He thanked everyone who had helped to make the Fair a success.

Then approaching the electric switch, he raised both hands toward the great buildings and said, "Farewell, a long farewell, to all thy splendor."

He threw the switch and every light on the grounds went out. As the lights dimmed, the band played "Auld Lang Syne."

After all the lights were out, a special display of fireworks on the west side of the plaza was set off. President Francis' features were outlined in fire. On another stand the word "Farewell" was displayed. On the opposite side of the plaza were outlined the words "Good Night." The greatest World's Fair in all history had closed.

THE EXHIBITS

BY DEPARTMENTS

CHAPTER I

THE EXHIBITS

Their Universal Character—Verdict of the International Jury—A Social Encyclopedia—Working Displays—Processes as Well as Products—No Discrimination of Race or Sex—Unlimited Opportunities for Instruction—A World's University

THE verdict passed upon the exhibits of the Exposition by the international jury was in the highest degree complimentary. It formally and officially indicated their excellence to the world and recorded it for history.

"The wisdom of all ages is none too great for the world's work!" proclaimed President McKinley in his famous Buffalo address, in September 1901. That fact had been realized and its suggestion faithfully acted upon by the builders of the Universal Exposition of 1904. It may be said truly that they had gathered together the wisdom of the world, as practically manifested by its works, and spread it before the people for their information, guidance and improvement. To quote Director of Exhibits Skiff:

A modern universal exposition is a collection of the wisdom and achievements of the world, for the inspection of the world - for the study of its experts, by which they may make comparisons and deductions and develop plans for future improvement and progress. Such a universal exposition might well be called an encyclopedia of society as it contains, in highly specialized array, society's words and works. It constitutes a classified, compact, indexed compendium-available for ready reference- of the achievements and ideas of society, in all phases of its activity, extending to the most material as well as to the most refined. It offers illustrations covering the full field of social performance from the production of the shoes on our feet and the pavement beneath them to a consideration of all of the serious problems of life and a presentation of the rarest and most delicate creations of the brains and hands of men in what are classified as the higher arts of civilization.

The Universal Exposition of 1904 at St. Louis, in celebration of the acquisition of the Louisiana Territory, was such a social encyclopedia in the most comprehensive and accurate sense. It gave to the world, in revised and complete detail, "a living picture of the artistic and industrial development at which mankind has arrived" and did actually provide a new starting point from which all men may direct future exertions. It submitted for the inspection of the public and its representatives-particularly for the information of specialists in all lines of industrial and social endeavor-an assembly of the best which the world has done and has to show in industry, art and science; and what is very important, it presented these achievements of society, these trophies of civilization, in highly selected, accurately classified, effectively illustrated array.

The creators of the St. Louis Exposition had the experience of all previous expositions which to plan and effect its high organization. The continuous and repeated burden of the message of experience handed down by all expositions has been a more perfect, more effective classification and arrangement of exhibits. Each exposition has

left this precept for its successor and the advice has come down in increasing emphasis and with increasing significance, with the results that here it was commensurately heeded. In the St. Louis Exposition, everything made way for the most thorough and direct presentation of its assembled treasures.

Too much significance cannot be attached to this characterizing feature of this latest Universal Exposition. An encyclopedia is valuable according to the degree in which it possesses two things—full and reliable information; and perfected arrangement and presentation of such information. In the first place it must contain complete and authentic data on all subjects; and second, this data must be prepared and classified so as to be effectively presented and of easy access—available for thorough and ready reference. There is no need to call attention to the great importance, to the indispensable nature of this last attribute in an encyclopedia. The same principle applies with even more force to expositions. Indeed, in so colossal a collection as a universal exposition its reference quality is almost the first important feature to be considered. The highest state of preparation and classification in expositions is absolutely required in order to render them practically available by the investigator. A visitor, to get value of an exposition, must have the objects of his study so grouped and presented that he may apply himself directly to the examination of them without having to mentally assemble them himself from different parts of the exposition, and without having scattered about them objects of a miscellaneous nature which divert and distract the attention instead of furnishing necessary comparisons and resultant information on his subject. For its perfection in this respect the St. Louis Exposition will be distinguished among the great expositions of the world.

Ideal Features:

If the ideal exposition was not reached in all respects, it was exemplified by many features of the Exposition of 1904. The passage from the commercial to the scientific exposition was completely effected. The exhibit of the product with its source and process of formation fully exemplified by working displays is one of the basic elements of the ideal exposition. A great variety of exhibits of this character was presented. Many special collective exhibits illustrative of various industries were also shown; some of these displays were among the most interesting and instructive ever installed for public inspection and represented the scientific method and intention of exhibit organization and installation. The perfect exposition will be a collection of exhibits of this and similar character. Instead of being an aggregation of displays by individual exhibitors in various groups, it will be a series of collective exhibits containing properly selected specimens and items without unnecessary duplication, each of which will properly and fully illustrate the industry or social or scientific activity which it represents. This principle was extended into the alignment of many exhibits in the various palaces of the Exposition. Another distinctive feature of the perfected exposition introduced and emphasized was the applied science and other investigating exhibits. Actual experiments in search of fundamental knowledge to be applied to human and social welfare and material progress, in a notably interesting and important series, were presented.

A further and marked advance note of the Exposition was its distinct universality and democracy. No discrimination between race or sex was shown. All were entered upon an equal footing. The work of woman was exhibited along-

side that of man with equal prominence; the manufacturers, industrial and fine art products and educational methods of the Americas with their composite races, of the various nations of Europe with their varying bloods, and of Japan and China were presented in competitive alignment as the products of citizens of the world; the perfection of the product alone was the criterion by which superiority of the worker was marked. No line was drawn by segregation or special treatment of any kind except in the case of those people close to or in a state of barbarism. For this reason, there was no Negro exhibit as such, just as there was no woman's building to suggest the separation of sex or assume the inferiority of one as compared with the other. Reflection of this character against the standing of any race or class was carefully guarded against. All were set upon the plane of even competition, for this was a thorough and comprehensive test of the workers of the world.

To the individual the Exposition furnished almost unbounded opportunity for instruction. Individual effort, however, while most effective, yields not so much as effort in combination. The individual inspection of the exhibits of a certain industry, art or science will not return as much to one or to society as the systematic study of such exhibits by a representative body of experts-especially when the inspection is accompanied by organized, capable and exhaustive discussion of the subjects and all the details involved. A convention of experts in electrical engineering will draw more from a review of a representative collection of electrical exhibits systematically arranged at an exposition than can a single individual or an unorganized group, especially when the convention is called at the exposition with the express purpose of taking advantage of the occasion and the exhibits offered to aid in the serious and systematic discussion of the subject planned-all looking to improvement of method and device. This fact and the need it implied suggested the international congresses. The congresses interpreted the exhibits of the Exposition, formally and permanently appropriated all of the improvement and suggestion represented in and conveyed by them and thoroughly canvassed the possibilities of further improvement in the future. By their aid in analyzing each industry, art and science, the individual secured the benefit of the wisdom of the best minds in inspection, comparison, deduction and in working out new ideas for the future. Thus, by the congresses was added the final story of perfection to the Exposition's structure, to its organization and results. Representing in themselves the greatest convocation of experts, leaders in industry, art and science and social performance that was ever assembled, they contributed to emphasize the preeminence of the St. Louis Exposition of 1904. To those who give serious attention to the welfare of mankind and the progress of the world, the deliberation of these great assemblies, crowned by the incomparable congress of arts and science upon the spot and during the progress of the greatest industrial, scientific and artistic festival of man, with the products of his skill, patience and endeavor arrayed triumphantly about, meant much. To the world at large the spectacle was indeed splendid, auspicious and inspiring.

Forty-Five Nations Represented:

The exhibits of the Exposition from an international or universal point of

view were notably distinguished and comprehensive. Every part and practically every nation of the earth - forty-five in all - were represented by characteristic displays.

The great wealth and promise of the Americas was fully illustrated. The countries of North America, including the United States, and those of South and Central America, as well as Cuba and Porto Rico, presented their natural and industrial products in potential array. The world saw in Canada the new and rising dominion of the far-spreading North, with illimitable possibilities of agriculture and minerals. The handsome Canadian pavilion was resplendent with the suggestion of national prosperity, ambition, enterprise and natural wealth, as were the truly impressive Canadian exhibits. Mexico had aligned an even more comprehensive array. Mexican exhibits confronted the visitor everywhere. The Mexican pavilion was the scene of brisk activity and brilliant social gatherings. The wealth and civilization of this powerful republic were shown to be growing apace. Cuba sent many auspicious tokens of its progress. The soil and the winds are kind to this island of the tropic sea and have made of it a garden prolific of nature's riches. The dainty Cuban pavilion gave suggestion of the refinement, warmth and color of its social life. Porto Rico contributed exhibits reflecting its extraordinary yield, which indicated that in another decade this rich land, too, may be well in the national procession.

Brazil headed the nations of South America. The Brazilian pavilion was a masterpiece of grace and beauty, the forerunner of its permanent duplicate since erected in the handsome Brazilian capital. Many authorities pronounced it to be the handsomest, richest, most graceful structure upon the exposition grounds. It was the focus of millions of admiring eyes. The vitality and high attainment of Brazilian civilization was proven by this splendid pavilion, the product of a native architect, as well as by the rich entertainments given in it, and even more definitely by the extensive and handsome array of exhibits presented everywhere in the exhibit palaces throughout the exposition grounds. Of natural wealth there was no end in extent or variety, as displayed by Brazil; while every evidence of social and industrial energy was present in its exhibits. Art and manufacture, mining and agriculture, were shown to be moving forward with rapid, steady stride to a consummation from which the wealth and the graces of the whole civilized world will profit much.

South American Wealth:

In the riches and importance of Argentine a surprise was in store for the northern nations. The exhibits of this republic proved that it is progressive with the energy and direction of a true democracy. With latitude and natural wealth that give it industries similar to our own, its representation indicated that the intelligence and enterprise of its people are fast making it potential in the affairs of the world. The beauties of its capital, Buenos Aires, were shown, well entitling this famous city to its popular designation of "the Paris of America." The Argentine exhibits revealed power, refinement and great promise; while its pavilion was suggestive of the realization of art in its life.

Other South American countries which contributed evidences of great natural wealth and industrial social achievement and progress were Venezue-

la, Peru and Uruguay. The resources, condition, progress, and special activities of Central America were well represented by Nicaragua, Guatemala, Honduras, Costa Rica and San Salvador.

Europe sent glorious evidence of the refined arts, and of the increasing activity and steady substantial growth and advance of the older nations.

France, the exquisite, contributed a profusion of its rarest creations. Germany overwhelmed the estimate of the world by an incomparable display, especially of its industrial art products, in variety and superiority that were a revelation; Great Britain, Austria, Italy and Belgium installed superbly rich collections; and the other European nations in lesser degree. Each of these countries submitted also evidence of its more substantial or basic achievements and activities in the way of exhibits of scientific, mechanical and other character.

The French pavilion was one of the rare beauties of the exposition grounds. Its exquisite architecture and detail, its rich interior and its spreading and graceful gardens were a never-failing joy to the eyes of all visitors. The character and location of the German pavilion made it one of the handsome and dominating features in the exposition picture. Its splendid grounds, graceful lines and profusely rich and colorful interior were a revelation of the luxury of German art, decoration and living. Great Britain's charming pavilion in its exquisite garden setting gave equal pleasure to the admiring public, as well as distinction to the Exposition. It was a spot of delight, restful and refreshing; indeed, and has happily been retained as a souvenir of the beauties that have passed. Belgium erected an imposing pavilion of glass and iron, decorated it with great panel paintings of its cities and housed within it a perfect collection of exhibits. Austria's pavilion of unique design was a distinctive feature which was much admired, as was the beautiful pavilion of Italy, and as were the quaint pavilions of Sweden and Holland. All of these national buildings were filled with art treasures, decorative, household and otherwise, the rarest that have come from the hands of men.

Never was such an array of the riches of a refined civilization presented as were assembled in the European sections of the exposition palaces and in these national pavilions. They constituted an exquisite exposition alone. When the doors of the exposition palaces closed each day, it was with regret that visitors were forced to turn away from absorbed inspection of these treasures; when the gates of the Exposition were closed permanently, they were given up with the deepest reluctance.

Altogether, the participation of European nations at St. Louis was on a far larger and more comprehensive scale than at Chicago; and on lines more advanced, refined and elaborate even than at Paris in 1900. The installation treatment of certain of the European exhibit sections was of a standard never before approached or attempted at expositions; and a similar comparison is true of a number of the national pavilions.

Surprises from the Orient:

A better acquaintance with the Orient was one of the valuable offerings of the Exposition. The scale upon which Japan participated was the most extensive and elaborate attempted by that country, although the empire had been represented at twenty-six expositions. The space occupied by Japanese exhibits in the

various palaces was three times that which Japan utilized at Chicago and twice that devoted to Japanese exhibits at Paris in 1900. The representation included a most extraordinary collection of exhibits covering practically every group and class of the Exposition. In round figures Japanese participation represented an expenditure of \$1,000,000. To facilitate the work a Japanese exhibit association had been organized which took charge of the collection of private exhibits in Japan, forwarded them to this country and installed them. This undoubtedly resulted in much more extensive participation than might otherwise have been prepared. Japan was represented by 80,000 exhibits displayed in the names of 2000 individuals or firms. The exhibit association not only installed but looked after the sale of articles in the exhibit and had authority to arrange permanent business relations between Japanese manufacturers and American firms. In this way the participation by individual exhibitors in Japan was made of the greatest possible benefit. In the Japanese garden two pavilions were given up to the exploitation of Japanese tea, over one hundred varieties being exhibited. In the exhibit palaces the industries of Japan, especially in the manufacture of silk, ceramics and other lines, were illustrated by extensive and elaborate displays. In connection with the remarkable exhibits of textiles were presented to the American public some surprising statistics. It appears that Japan in 1903 had in operation 1649 factories devoted to these modern industries, while no fewer than 302,367 weaving shops existed in private houses. The textile industries in Japan, which were almost unknown forty years ago, were giving employment to 772,954 persons.

Japanese arts and crafts were illustrated by many specimens of Satsuma pottery and cloisonne vases, some of great value: by jewelry, wood carvings, furniture, rich embroideries. Specimens of delft ware were shown, supporting the claim which Japan has frequently made that the famous delft blue associated with the ware of Holland was obtained in Japan by traders from the Dutch kingdom.

One of the surprises which Japan prepared for the American mind was her railway exhibit. The first railway in Japan was constructed in 1872. That country in 1904 had 4250 miles of track in operation with 1700 locomotives of which 800 were from the United States. The first telegraph wire was run in Japan in 1871. There were at the time of the World's Fair 31,170 miles of telegraph lines. The postal service practically had its beginning in 1870. In 1903 the number of pieces of mail matter handled in that country numbered 902,701,042. The railroads, the telegraph service and the postal facilities were shown by a collection of elaborate topographical maps made of rice paper and molded to represent the mountains, valleys and plains of Japan. On the mainland the railway lines were indicated by actual tracks occupied by miniature trains. Red wires strung on little poles indicated the telegraph lines.

The extent of the exposition grounds made it possible for all foreign governments to occupy as much space as needed for their buildings and also to improve it according to their own ideas of landscape gardening. Japan took advantage of this to transform a space of 150,000 square feet into a Japanese garden where dwarf pines and Japanese shrubs were planted and where iris was placed in a miniature lake, making a true setting for the architecture of the several characteristic pavilions. A visit to the Japanese garden was a visit to Japan.

China's Exposition Debut:

China for the first time in history as a government officially participated in the Universal Exposition of 1904. The Chinese pavilion was a reproduction of the summer palace of Prince Pu Lun at Pekin. It was entered through a gate reproduced in its entirety with the original as a pattern, all of the materials being brought from China and put together by Chinese workmen. The three buildings constituting the palace contained beautiful exhibits of Chinese carvings, hangings, screens, paintings, and porcelains.

China's great collective exhibit, which occupied 127,000 feet of space in the palace of Liberal Arts, was an instruction to the new world. Northern China furnished silk goods and furniture. The Ningpo section sent many articles of carved inlaid wooden furniture such as tables and chairs. Hangchow presented a collection of 4000 fans of the various styles in use in China. The Yangtze River ports exhibited bronzes, porcelains, jades, agates, silk and grass cloth. From the imperial looms at Nanking were forwarded brocaded satins, velvets and ribbons. Kiukiang displayed silverware. The Viceroy Tuan Fang contributed the most complete collection of curios ever seen in this country, consisting of old bronzes, porcelains and costly articles, among them a vase valued at \$10,000. Tientsin exhibited fine white and black Manchurian furs. In one part of the Chinese section was a collection in miniature of the boats, large and small, used throughout China, one hundred different types. There were small sampans, post dispatch boats, fishing smacks, mandarin boats, house boats, fishing rafts, coasters and junks. With the war junks were shown some of the ancient cannon of China. From Hangchow and other Chinese sections were shown silks in wonderful variety. Canton exhibited ivory and silver hand-made work. Amoy sent wooden idols and artificial flowers. Foochow displayed lacquer work and stuffed birds.

Exploitation of their teas was the dominant feature with both British India and Ceylon. These countries erected large and handsome pavilions which were crowded with curios and specimens of their ancient industries. Ten years ago, the teas of British India were introduced into the United States largely through exhibits made at the World's Columbian Exposition; before that these teas had been almost unknown. British India and Ceylon came to St. Louis to still further exploit their teas, especially the green teas. The East India building was a curious and beautiful illustration of Mohammedan architecture. Oriental draperies, shields, fans and vases of brass were among the interesting exhibits displayed.

Thirty years ago, Ceylon was known chiefly for the production of coffee, the island exporting a million tons annually. Now coffee has almost disappeared from the exports of Ceylon while two years ago tea was sent out from that island to the amount of 150,000,000 pounds, of which 18,000,000 was taken by the United States. To the American public a new impression was given of the importance of Ceylon by the exhibit in the Liberal Arts building of a model of the artificial harbor of Colombo, which is now the tenth seaport of the world in point of tonnage. Beautiful specimens of repousse work in silver, of furniture carved from ebony and satin wood, of lace and of tortoise shell goods were shown in the Ceylon building.

CHAPTER II

EDUCATION

The Keynote of the Exposition—A Model University—The Educational Palace—Model Schools for Defectives—Commercial Training—Exhibits of the Colleges—Foreign Participation Unprecedented—The Monographs—Elementary Instruction.

ONE justification for an exposition and its attendant expenditures is the measure of progress it establishes from the preceding mile stone. A great impetus to manufactures in the United States dates from the Centennial Exposition of 1876. The influence of art and architecture was strongly impressed upon the people of this country and especially upon those of the Mississippi Valley by the World's Columbian Exposition of 1893. What did the Universal Exposition of 1904 teach? What were the lasting lessons directly given to the twenty millions of visitors and indirectly conveyed to all nations?

For the first time in exposition history, a building was devoted entirely to education. This palace was given a central place. The department of Education was placed first in the classification of exhibits emphasizing a departure in exposition practice from the commercial and manufacturing to the educational theory. The entire organization of the Exposition was based upon the conclusion that education is the source of all progress.

Contributions from the educational experience and methods of all of the leading civilized countries were presented in the classic palace of Education, for comparison and scientific study, and emphasized the marked advancement made in the educational methods and systems of the world. The specializing of education, commercial, agricultural, industrial, technical, art and normal, the rapid extension of which has been the most notable development of the last decade, was fully illustrated. The great advancement made in the education of defectives was also shown in thorough and interesting manner.

Washington University an Exhibit:

A model university, campus and buildings, included within the exposition grounds, proved to be a unique feature. The Washington University tract of over 100 acres and its quadrangle and several additional groups of handsome granite buildings, ten in all, constituted a prominent and an integral part of the Exposition's facilities and attractions, furnishing at the same time an impressive and a practical exhibit of the progress of modern education, the importance attached to it and the splendid equipment supplied for it.

Great care was exercised in the organization of the exhibit of education and of the department by which it was to be selected and assembled. The prelimi-

naries in this direction were conducted by the Committee on Education of the Exposition. After the selection of Director of Exhibits Skiff and the appointment of the chief of the department of Education, Howard J. Rogers, the responsibility for the preparation and collection of the exhibit was assumed by that department.

In outlining the exhibit, provision was made that its character and scope should be such that when assembled it would accurately reflect and illustrate the educational methods and comparative performance and advancement in educational work of the leading nations of the world. The classification adopted indicating the character of material to be submitted as exhibits in the palace of Education was comprehensive. It provided for an alignment of systematic educational displays under eight main heads, as follows:

Elementary education; secondary education; higher education; special education in fine arts; special education in agriculture; special education in commerce and industry; education of defectives; special forms of education-text books, school furniture and school appliances.

The efforts of the department of Education in assembling a representative series of displays under each of these principal divisions met with phenomenal success. The world has come to realize that it must give principal attention to the subject of education, and any movement or demonstration that promises improvement in educational work or methods will more or less promptly receive its hearty support. The attitude of the educational interests, agencies and fraternity of the United States and of the other leading nations toward the Exposition, and especially toward its educational exhibits, was most cordial and helpful and resulted in the collection and presentation in the palace of Education of a series of exemplary displays that have left an impress of stimulating and improving suggestion which will be felt long and favorably in the educational processes and results of the world.

The N. E. A. Committee:

Much credit for the superior character of the educational exhibit is due to the National Educational Association, the influence and support of which body contributed greatly to the perfection of the exhibit. Upon the request of the Committee on Education of the Exposition, this influential organization early appointed a distinguished committee to co-operate with the Exposition in the promotion of the work of its department of Education, the committee being composed of the following members:

William T. Harris, chairman, Washington, D. C.
 Edwin A. Alderman, New Orleans, La.
 Nicholas Murray Butler, New York.
 W. T. Carrington, Jefferson City, Mo.
 Andrew S. Draper, Champaign, Ill.
 Daniel C. Gilman, Baltimore, Md.
 Aaron Gove, Denver, Colo.
 James M. Greenwood, Kansas City, Mo.
 Arthur T. Hadley, New Haven, Conn.
 Halsey C. Ives, St. Louis, Mo.

William R. Harper, Chicago, Ill.
 Lewis H. Jones, Cleveland, Ohio.
 Charles M. Jordan, Minneapolis, Minn.
 David Starr Jordan, Stanford University, Cal.
 James McAlister, Philadelphia, Pa.
 William H. Maxwell, New York.
 Carroll G. Pearce, Omaha, Neb.
 Jacob Gould Schurman, Ithaca, N. Y.
 F. Louis Soldan, St. Louis, Mo.
 Calvin M. Woodward, St. Louis, Mo.

With the aid of this representative committee and other co-operative committees formed later and of the bureau of education and the department of state at Washington, a collection of exhibits was assembled in the palace of Education which was pronounced by many distinguished visitors to be the most complete and comprehensive representation of the various phases and features of the important subject of education ever made. An indication of the superior and illustrative character of these displays may be gathered from this review, condensed from a report of Chief Rogers:

Education is the first need and the most important and powerful agency of society. This fact, recognized by the Exposition in its general motive and scheme, was emphasized in the organization of its initial exhibit department, Education. As the general intention of the Exposition was to bring together the achievements and methods of the various peoples of the world in all phases of activity for mutual inspection and improvement along general social, industrial and artistic lines, the special work of the department of Education was to assemble the educational systems and methods of all nations of the world, so that each might be examined and compared with the others, to the end that superior methods and systems thereby developed might be generally adopted.

Palace of Education:

The assignment of a building solely for educational exhibits permitted this plan to be properly developed. It is to the great credit of the management of the Exposition that for the first time in exposition history a building was devoted solely to educational exhibits and processes. Even in Paris, where the respect for letters and science is more firmly grounded and outwardly visible than in this country, education was at the Exposition of 1900 obliged to share a building with the department of Liberal Arts and then accept the greater percentage of its space in the gallery. The recognition given by the directors of the St. Louis Exposition to the importance of the educational work of the world has been highly appreciated by the educational public and was in no small degree the reason why every branch of educational work was so fully represented at the Exposition. The building assigned to the department was eminently fit. Indeed, the graceful, classic design of the palace of Education and its pure architectural lines rendered it in the opinion of many experts the most beautiful building in the exposition picture. Its situation, also, in the very heart of the exposition grounds on the Grand Basin was notably distinguished and highly satisfactory. It was one of the four buildings which formed the great quadrangle of which the Louisiana Purchase Monument was the central feature.

In shape the building resembled a keystone, with a north facade of 760 feet, a south facade of 450 feet, and two equal sides each 525 feet in length. The principal entrances were on the axes of the building and made in the well-known form of a triumphal arch. At each angle of the structure was a pavilion forty feet square forming a supplementary entrance, and these pavilions were connected by a colonnade of monumental proportions which gave a distinctive character to the building. The columns were fifty feet in height and the cornice line was sixty feet in height. The building covered, including the colonnade, 293,000 square feet, or about seven acres of ground. It was surrounded by the lagoon system and approached by six bridges—three leading out of the north, south and east main entrances, and three crossing from the northwest, northeast and southeast pavilions.

Some of the finest pieces of statuary on the grounds adorned the building, executed by Robert P. Bringham, of St. Louis, who did all the pieces for the building. The most notable were the quadrigas over the main entrances flanked by the allegorical groups, "Thread of Fate" and "Flight of Time"; the "Music" group on block pedestals at the right of each main entrance; the "Manual Training" group on block pedestals at the left of each main entrance;

the "Goldenrod" architectural figure repeated over entrance colonnades; "Archaeology" and "Music" spandrels over large doors; and "Geography" and "History" spandrels over small doors. Immediately in front of the north entrance was a statue in heroic size of Johann Pestalozzi, designed by A. Jaegers, and in front of the west main entrance a copy of the famous statue of Horace Mann, by H. K. Bush-Brown.

The roof supporting trusses were all of wood, but as the cross pieces were fifty feet high the interior of the building had a notably open and graceful appearance. It was remarkably well lighted and inasmuch as all of the long exterior windows opened out on the colonnade, a distinctive feature of the building, the glare and heat of the direct sunlight was softened and the building at all times had a tone and a temperature far more agreeable than the average exposition building. Every provision for public convenience and comfort was included in the interior arrangement and installation.

In its comprehensiveness the participation in the educational exhibit fully reached expectations. Thirty-four states and territories, four cities and twenty-five foreign nations-the orient for the first time on an adequate scale-contributed to the elementary and secondary groups. Twenty-nine colleges and universities, and six professional and technical schools were exhibitors in the group of higher education. Fifty-nine colleges participated in the exhibit or their respective states. Seven of the best art schools of this country, for the first time, made a classified exhibit. The agricultural and mechanical colleges of the respective states and or the United States, under special grant of \$100,000 from Congress, made a collective exhibit which upheld in every detail the high grade or special instruction given in our farm laboratories. In commercial and industrial education, the business colleges and commercial high schools, and industrial and trade schools, contributed to many exhibits. In the section of education or defectives the convention of American instructors or the Deaf and the American Association of instructors of the Blind combined to make a working exhibit. In the group devoted to special forms of education, publications, and school equipment the exhibits were many and representative.

It may be stated, therefore, that there was gathered in St. Louis a basis for comparison and generalization upon the subject, methods and progress of education, from which inferences and truths of value could be derived. The numerous process exhibits assembled in accordance with the main plan or the Exposition or presenting working methods in all divisions or the world's work, added to the possibilities in this direction.

Domestic Participation:

The combined exhibit of the elementary and secondary school work of the United States was easily in advance of anything of the kind before presented and to the highest credit of the participants. The rural and the city school and the public and manual training school were represented in every phase or their condition, work and advancement. Models showing the development of school buildings from the primitive log school in the forest to the present modern rural school and on up to the latest design of the city high school were submitted. Equipments in similar variety were shown or every typical school condition. Actual school room work was represented by an exhibit or living classes of children engaged in regular studies and exercises, during the entire period of the Exposition. The exhibits of the schools of the older states, presented in juxtaposition with the exhibits of the newest state admitted of the newer territory waiting for admittance, illustrated the vast extent of this country and the presence and vigor or its educational agencies in all sections. Two features emphasized in this exhibit of elementary education were the conditions surrounding and governing administration or the modern metropolitan school system and the conditions met in the administration of rural schools - the points of similarity and variance being fully set forth by a succession of interesting examples and displays.

The metropolitan school system and methods were fully and interestingly illustrated by the very admirable and thorough exhibit of the St. Louis public schools. In this exhibit

the class work or city schools was demonstrated by daily exercises during the entire period of the Exposition. One week was devoted to cooking and domestic economy, the next week to kindergarten work, the next to manual training, and the fourth to experimental physics. The routine was then gone over again, so that each grade of work came seven times into evidence before the public. A different class was called upon for each day's work, these being selected in succession from various representative schools of the city.

The public-school exhibit as a whole was in the highest degree comprehensive and representative of the methods of education now practiced in these universal training schools of the country's youth. The manual training school exhibit was notably thorough and strikingly set forth the superiority of systematic, expert instruction and training over indiscriminate shop apprenticeship, so long the means and avenue of industrial progress.

In no other exposition has the work of the states been so thorough and the installation so well arranged for the bringing out of salient points in their educational systems and history. The following states and territories participated in the exhibit:

Arizona.	Iowa.	Nebraska.	Porto Rico.
Arkansas.	Kansas.	New Jersey.	Rhode Island.
California.	Kentucky.	New Mexico .	South Dakota.
Colorado.	Louisiana.	New York ,	Tennessee.
Connecticut.	Massachusetts.	North Dakota .	Texas.
Idaho.	Minnesota.	Oklahoma.	Utah.
Illinois.	Mississippi.	Oregon.	West Virginia.
Indiana.	Missouri,	Pennsylvania.	Wisconsin.
	Montana,	Philippines.	

A feature in the arrangement of these state exhibits was the effort to illustrate the course of study of the schools, and this was in almost every case the pivotal point, around which the exhibit was built up. This was as it should be, inasmuch as the course of study represents the brains and thought and the result of years of experiment in educational work. In the state of Massachusetts, the exhibit was arranged by subjects, that of the state of New York by grades. Both of these innovations met with high praise from experts.

In the field of higher education the participation of fourteen of the great universities of the country was obtained, with the exception of one or two by personal interviews with the heads of the institutions. Very early in the history of the department assurances were received from Harvard, Yale, Columbia, Johns Hopkins, University of Missouri, Illinois, Chicago and Washington University that they would participate. The northwest quadrant of the court of the palace of Education was assigned to universities and it was one of the most attractive sections of the building. Notable among the exhibits of these institutions were the statistical and astronomical exhibits of Harvard; the literary, pedagogic and psychologic department exhibits of Missouri; the agricultural and mechanical exhibits of Illinois; the literary exhibit of Johns Hopkins; the astronomical exhibits of Chicago and California; the historical exhibit of St. Louis and the models of Wisconsin and Washington.

College and University Exhibits:

A great number of colleges, nearly fifty in all, were represented in the exhibits of their respective states, so that a remarkably complete showing was made of the American college and university. The colleges of Massachusetts were grouped in a collective exhibit, including Williams, Amherst, Boston University, Holy Cross, Simmons, Wellesley, Smith and Mt. Holyoke. The display of the Christian Brothers College of St. Louis with those of a series of miscellaneous colleges grouped in interesting order added to the representative character of the installation in this section. Higher education for women was represented by attrac-

tive exhibits from Vassar, Bryn Mawr, Woman's College of Baltimore and smaller exhibits from Wellesley and Mt. Holyoke.

In the university section as indicated, astronomy played an important part in the sciences exhibited. The exhibits of the Harvard observatory, of the Yerkes observatory, of the Chicago University, and of the Lick observatory of the University of California were very complete and instructive. In the university section also were many beautiful models of grounds and buildings. Particularly fine were those of Missouri, Wisconsin, Washington and Columbia. The historical exhibit of the St. Louis University was full of interest for dwellers in the Louisiana Purchase states, as so much of the early history of that section centers around the efforts of the pioneers of the Roman Catholic church. The famous pathological exhibits on tuberculosis arranged in the south balcony of the palace of Education under the department of Social Economy were nearly all contributed by the medical departments of our great universities. A library exhibit was installed, for the lack of room in the Education building, in the Missouri state building, where a regularly kept library in working order attracted great attention and afforded much instruction in the way of the latest and most scientific library methods.

In the group of art education was assembled the finest exhibit from the art schools of the country which had ever been presented at an exposition; and this display represented the first organized attempt made to bring these institutions into comparison. The leading art schools of the country were exhibitors, as follows: St. Louis School of Fine Arts, Pennsylvania Academy of Fine Arts, Boston Normal Art School, Minneapolis School of Fine Arts and the art department of Pratt Institute.

The exhibits of the colleges and independent technical schools occupied half of the west corridor of the building and were fully up to the standard of other institutions for higher education. The principal technical schools exhibiting were the Massachusetts Institute of Technology, Rensselaer Polytechnic Institute, Purdue University, Worcester Polytechnic Institute, Pratt Institute and Bradley Institute.

The exhibit of the colleges of agriculture and mechanic arts and experiment stations merits more than passing mention. This exhibit was carefully planned and elaborately executed. At a meeting of the Association of Agricultural and Mechanical Colleges and Experiment Stations held in Washington in 1902, committees were appointed to settle the matter of an exhibit illustrative of the work of these institutions, one section representing agriculture and the other mechanic arts. Later these committees were consolidated into an exposition committee consisting of the following gentlemen whose duties were to supervise the preparation, assembly and installation of the exhibit decided upon:

W. H. Jordan, Geneva Experiment Station, chairman; A. C. True, U.S. Department of Agriculture, Washington; W. T. Harris, commissioner of education; H. J. Waters, Missouri; T. F. Hunt, Cornell University; J. K. Patterson, Kentucky; W. E. Stone, Purdue University; C. F. Curtis, Iowa; H. W. Taylor, Massachusetts Institute of Technology.

Agricultural Education:

As finally organized the exhibit comprised the following distinct sections:

(1) Exhibits of the bureau of education, showing the relations of the United States government with education in agriculture and mechanic arts; (2) the relations of the United States with institutions for research in agriculture; (3) agronomy or plant production, including soils, fertilizers, plant laboratory, field crops, horticulture and forestry, plant pathology, economic entomology, each in charge of an expert; (4) zootechny or animal industry, including animal husbandry (investigation), animal husbandry (instruction); (5) agrotechny, or agricultural technology, including dairy laboratory, sugar laboratory; (6) rural engineering; (7) rural economics; (8) mechanic arts exhibit, including civil engineering, mechanical engineering, electrical engineering, mining engineering, technical chemistry,

architecture, drawing and shop practice (including textiles and trades), domestic science, ceramics.

This group of exhibits constituted one of the most complete, valuable and instructive series of demonstrations and displays in the palace of Education and marked an era in the installation of working educational exhibits. The whole display occupied about 14,000 square feet of space and its installation was very effective and attractive. It notably demonstrated to a high degree the economies which may be and are being taught in the agricultural colleges and experiment stations throughout the country, and the possible productiveness of all of our agricultural territory. The testing laboratories for milk and for soils which were in constant operation, as well as many other physical and chemical laboratories, well repaid the careful inspection given them by the thousands of visitors interested in agricultural development and its own and allied processes.

One of the interesting exhibits presented was that of a business college situated in the southwest pavilion of the palace of Education in a space forty feet square. This space was fitted up at great expense and in the most artistic and attractive manner; and a working business college, complete in every detail, was maintained upon it throughout the exposition period. Under this group also was classified the exhibit of a well-known correspondence school, the management of which erected a special building, the Guild Hall, on the Model Street, in which was contained a complete exhibit of the plans and courses of instruction of this important enterprise.

Perhaps the most unique of the extraordinary series of exhibits presented by the department of Education was the living exhibit of the model schools for the deaf and for the blind, installed in the group devoted to the education of defectives. This remarkable exhibit was made with the co-operation of the leading institutions for the deaf and blind throughout the country, which sent groups of children in the charge of superintendents to participate in the dally classes held in the palace of Education. It was attempted to demonstrate to the general public in this most interesting and painstaking exhibit what has hitherto been slowly realized—that the state is justified in giving as complete instruction to those deprived of some natural gifts as to those children who are possessed of all senses; and that such aid is their right and is in no wise to be considered a charity. No other exhibit feature at the Exposition attracted more attention; and the demonstration in every way justified the efforts and expenditure of those states, associations, institutions and individuals engaged in its preparation and execution, as well as the outlay of the Exposition Company in providing quarters for the visiting pupils, teachers and caretakers during their presence upon the exposition grounds. Fourteen schools, representing various states, participated in this exhibit, with superintendents in charge.

The Deaf and the Blind:

The schools illustrated in detail all of the methods employed in educating the deaf and dumb and blind; and they were in operation from June 1st to November 1st, a period of five months. The classes were limited to six pupils and a teacher, and very few remained over a month. The largest number of schools represented at any one time was seven. The school hours were from 11 A. M. to 12 M. and from 1:30 to 3:30 P. M.

In the school for the deaf, the oral classes were the most popular, especially the primary classes, where the little ones were given their early lessons in speech and lip reading. These classes afforded visitors an opportunity to see the difficulties to be overcome and how they are mastered. The advanced oral classes gave demonstrations of the practical use of speech and lip reading; these were notably supplemented by the performance of the college graduates who conversed freely with the visitors about the work of the deaf, depending entirely on lip reading and speech. The primary and advanced manual classes illustrated the method of educating the deaf by the use of the manual alphabet. The class from Ohio and

one from Missouri were able to illustrate the oral or manual method, as occasion required. A school for stammerers gave public demonstrations of the method of correcting defective speech, which has proved very beneficial to teachers of the deaf. A very attractive feature in the industrial department for the deaf was the art class in which the children made three minute sketches of visitors.

In the model school for the blind one of the most interesting features was the kindergarten class. Here was given an illustration of the children at play. For games they were arranged within a circle which was marked at intervals by little wooden strips to guide them and show each his or her standing place.

Visitors were very much interested in the point system. A great many seemed to be under the impression that the blind were still struggling with raised letters, and these newer systems were a revelation to them, as was also the rapidity with which they could be used. A teacher of the adult blind demonstrated a system for the use of those who were too old and their fingers too hardened to learn the point system.

The industrial department for the blind attracted considerable attention on account of the great difficulties under which the pupils labored. A class in sloyd work, where the blind boys were using sharp tools with great accuracy and precision, proved very popular.

It is needless to say that the music room was always crowded. Vocal and instrumental solos, duets and orchestra performances were given at intervals throughout the day.

Three deaf-blind pupils were present at different times. Emma Kubic, aged eight, came from the Illinois School for the Blind. She had been in school only a short time, and the public had an opportunity of seeing the first steps employed in reaching the mind of a child deprived of sight and hearing. She was just beginning to learn the names of objects, and to describe actions in sentences of a few words.

Lottie Sullivan, aged eighteen, came from the Colorado school. She was much more accomplished and represented a further degree of development. All communications were spelled into her hand by the use of the manual alphabet or presented in Braille or New York point writing. She expressed herself in the same manner, and in addition could use the ordinary typewriter. Her teacher was deaf, so it was necessary to have a third person to interpret.

Charles J. Selby, of Chicago, was still older, and could speak quite fluently. He was the author of many pieces of verse which he distributed.

Helen Keller and her teacher, Miss Anna M. Sullivan, were the guests of the Exposition a week in October and the 18th of that month was known as Helen Keller Day. Only a few of the thousands that came to see and hear her could be accommodated in Congress Hall where a special program was given to illustrate her remarkable acquirements.

An extensive display of objective exhibits - articles employed by the pupils and equipments and paraphernalia used in the model schools - was also made, and proved of interest to the daily increasing attendance upon this unique living exhibit.

The Model Schools:

That the superintendents and schools were satisfied their time and energy were well spent and the risk and responsibility of bringing pupils to the Exposition were justifiable, and that they were pleased with the economic arrangement were shown by the following extract from a resolution passed by the International Congress of Superintendent and Principals of Schools for the Deaf, held in St. Louis, August 19th, 1904:

"They (the model schools) have served to advertise more widely than ever before the grand work that is being done for these classes of children and to set forth the methods of accomplishment of this work. The large audiences that have constantly attended these teachings testify to the part these schools have played in the Universal Exposition

and fully justify their existence."

Acknowledgment is due in connection with the organization and success of the exhibit to the American instructors of the Deaf, the American Association of Instructors of the Blind and other associations; also to Dr. E. M. Gallaudet. Dr. S. M. Green, Dr. Alexander Graham Bell and others.

An exhibit of the care and methods applied in training the feeble minded was also made, chiefly under the advisory supervision and aid of Dr. A. C. Rogers, secretary of the Association of Physicians and Superintendents of American Institutions for Feeble Minded and Idiotic Persons. The materials for the exhibit, which were presented in collective order, were contributed almost entirely by the school departments of such institutions, fourteen of which participated in the display, representing eight states.

An extensive and representative series of displays of school publications, of text books, and of school furniture and appliances completed the installation in the domestic section. Important exhibits of this character were made by practically all of the leading manufacturers of these supplies and fixtures, occupying over 6,000 square feet of floor space.

Foreign Participation:

A principal purpose of the educational exhibit was the participation of as many foreign governments as possible in order to give a thorough representation of the world's methods and systems of education and afford a wider range of comparison with the system employed in the United States. The anticipation of the educational public was increased by the fact that there had never been in this country anything more than a desultory foreign exhibit of education at any exposition. Even at Chicago only two or three foreign governments were adequately represented.

At St. Louis the foreign participation was very satisfactory, as every quarter of the globe was represented by its foremost nations, and every nation whose educational system could by comparison be of value to the United States or which showed traces of the influences of the educational system of the United States was represented. The following foreign countries participated in the educational exhibit: Argentine, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, China, Cuba, France, Germany, Great Britain, Hungary, Italy, Japan, Mexico, Monaco, Nicaragua, Porto Rico, Portugal, Romania, Siam, Spain, Sweden, Syria.

A notable feature of the foreign section was the series of exhibits of trainings given to young men by a number of leading foreign nations, notably Germany, in foreign commercial relations. The aim of the technical high school of Germany, as indicated in its display, is to afford a higher education for the technical professions in the civil and public service and in commercial undertakings, as well as to cultivate arts and sciences in so far as they come under the head of technical instruction. In one of the rooms devoted to technical exhibits was an exhaustive display of methods for colonial training in which appeared not only the careful study of the geography and topography of the country, its routes of trade, its fertile and sterile regions, but also actual specimens, and a careful description, including its commercial value, of every agricultural and mineral product of the country, together with an equally complete representation and description of every bird and animal native to the clime. All this is matter of class routine and regular curriculum; so that when an agent or employ goes to East Africa or the South Pacific, he goes as one familiar with every possibility of the country and not as a stranger.

This exhibition of the methods of Germany might be multiplied by similar examples drawn from Belgium and France, but it would be duplication, and Germany seems to be well in the lead. It is a matter we can well take under consideration, for blessed as we are with natural advantages which have rendered easy thus far our commercial supremacy, it

needs no tongue of a prophet to foretell that with the decrease of these advantages consequent upon a more thorough occupation of the country we cannot hold our own in the markets of the world unless we train equally well our agents and factors. We have been prone to believe that to give a boy his elementary instruction and a year or two, or perhaps all, of his high school course, and then turn him into business, relying on his native shrewdness and adaptability to push along, was sufficient for a business training. It may have been under old conditions; it is not enough in the present-day world competition. Our so-called business colleges have been a makeshift and devoted to turning out bookkeepers and stenographers-good enough in their way, but a short way. They can contribute nothing to the solution of the question unless they are thoroughly reorganized. Two or three cities have provided for high schools of commerce, but they are as yet John the Baptist crying in the wilderness. The question has come, and come to vex us till we solve it.

Another characterizing feature of the foreign display was the exhibit of training schools for teachers. This was the occasion of the following special remark by the jury which examined the exhibits of elementary education: "In the chief foreign countries professional schools for the training of teachers are easily classified by virtue of their administrative relations; but in our country the different orders of pedagogical training merge into each other almost imperceptibly because they are all based upon the same fundamental conception of the teaching profession."

Foreign Teaching Methods:

There were also disclosed by the exhibits striking differences in the spirit and methods of instruction. In France the teaching is logical and analytical. The stress of pedagogical training in that country is upon the treatment of subjects and the abiding effects of that training are seen in the theses by teachers and by school inspectors (the latter all men of professional training) which formed a very interesting and instructive part of the exhibit of that country. The analytic principle is maintained in the manual training which, as shown by the examples presented, consists of a graded series of exercises upon the elements that enter into simple constructions. Germany adheres more closely to the authoritative method of instruction, a fact plainly shown by the photographs of classes in which every child seemed listening with breathless attention to the word of the teacher. From the photographic displays one would readily infer that in our own country the emphasis of class exercises is upon the activity of the pupil; in Germany upon the personality of the teacher.

Concerning other distinctive features, no account of the exhibit of Education would be justified unless mention was made of the wonderful scientific exhibit of the faculties of the German universities. From the elaborate medical exhibit which was the delight of every physician who visited the grounds to the exhibit of instruments of precision and scientific research it was unsurpassed. This is a scientific age and naturally the exhibits of the universities would assume that form; but everything has its reason, and this exhibit seems to me a magnificent attempt on the part of Germany to demonstrate that in the field of special training, particularly in biology and medicine, her universities are still the foremost in the world. In view of the marvelous advance of American universities in this respect in the last fifteen years, and the acceptance of the idea that it is no longer necessary for American students to be trained abroad, this exhibit assumes a most interesting aspect, even if it may not be deemed to become historic in its purpose.

The Swedish exhibit was particularly interesting to Americans on account of its sloyd which brought to many the source of inspiration pure and undefiled. A rich display of pupil's manual work was brought over, as well as a thorough exemplification of the Sloyd Training College at Nass, the original home of the Swedish national system. Another interesting feature of the exhibit was the chart describing the lectures on social topics before the secondary school for girls in Stockholm. Among the topics for 1904 were "Features of

the Swedish Poor-Law Administration," "Private Charity in Stockholm," "Housing Question," "Legal Position of Swedish Women," "Social Settlement Projects and their Practical Realization."

Perhaps no exhibit was richer in suggestive details than that of Belgium. Blessed with a fruitful peace of seventy-five years, enjoying the respect and legal protection of its powerful neighbors, Belgium has an enviable record for continued improvement of the condition of its people, materially, intellectually and morally-all of which was well reflected in its exhibit. All the elementary public instruction was directed by the communes represented by a council of seven members as a minimum, thus placing in a small board supervision over a small area. The teachers enjoy security of position with rights of appeal guaranteed by the constitution. Their salary is fair, bringing a regular increase at recurring intervals, and carrying with it lodgings at the commune's expense. At the age of 55 or 60 years they are entitled to retirement on a pension equal to two-thirds the highest salary they have received. Efficient government and cantonal inspectors visit each school at least twice a year. Four times a year each cantonal inspector meets, by districts, every member of his teaching staff. Attendance is compulsory - expenses are paid. Teachers selected by lot (here is a good point) give to the children of the school where the conference is held two practical lessons relating to the theoretic questions treated in the papers submitted to the conference. After the pupils are dismissed, these lessons are criticized by those present. Over 60% of the teachers who begin in a commune finish their life work in the same commune. The devotion and pride they bring to the advance of their schools and the power of their influence over the community may be readily inferred.

The commune provides also a garden where the elements of agriculture taught in school are practically explained and demonstrated. The trees and flowers planted are placed under the protection of the pupils and while contributing to their aesthetic development promote also a respect and guardianship for public property. More might be said of their professional training, their continuation schools, their intensive study of agriculture, but space forbids.

Industrial Training Abroad:

In the three countries of France, Austria and Italy the industrial training stood forth preeminent. France, it is true, gave in charts and printed volumes a full record of the work of her primary, secondary and higher instruction, but unfortunately it was not so installed as to be easily studied and all information obtained had to be sought. Her attractive and carefully considered exhibits came from the higher professional primary schools maintained by the cities of France and under the supervision of the ministry of commerce and industry. An interesting and instructive exhibit in the French section was the daily class illustrating the oral methods of teaching languages.

The exhibits of the art and industrial schools of Austria and Italy have never been surpassed on American soil and were at once the admiration and despair of American critics. The exhibits of both nations were limited to the groups of art and industrial education. The international jury on the former group reported: "We feel, as jurors, that it is a part of our duty to call the attention of American educators to these excellent exhibits (referring particularly to Austria), as showing that art is not only an ornament but an excellent investment when properly directed. These schools, as well as the excellent schools of Great Britain and Ireland, are under the direct control of the government and opportunity is given pupils to perfect themselves in all art industrial pursuits; special training being supplied for those who are fitting themselves for foremen and directors of manufacturing establishments wherein an art knowledge is necessary. Special attention is given in various schools to meet local industrial demands."

The art schools of Great Britain and Ireland mentioned in the foregoing extract were indeed well represented, but the typical feature of the English exhibit was the selection

of certain features of schools, or of class work, and their presentation in a most attractive manner. This policy accorded very well with the varied educational efforts, public and private, state and church, which are to the American mind interwoven in English educational administration. It certainly had the merit of clearly setting forth many admirable features of English schools.

For the Orient the great exhibit was from Japan, whose statistical charts set forth in a most graphic way the marvelous growth of education in that country since 1867 when the old system of education gave way to the western system. The development in the last ten years has to be seen to be credited. The percentage of elementary school attendance is nearly 92%. Every group of the official classification of the exhibit of Education contained Japanese exhibits; but in accordance with the theory of the country's development great stress was laid upon art as applied to the trades and industries. The exhibit of the University of Tokyo was specially remarkable in the field of applied science. It was very easy to note the marks of American influence in every field of administrative effort.

The exhibit of the Chinese commission was interesting from two facts: it was the first exhibit of Chinese education ever made, which gave it as coming from the oldest recorded civilization an intense historical value; and, second, the interesting comparison between the old education and that induced by means of foreign schools in the sea-port towns. Little progress has been made by the latter compared with the field of possibilities and the contrast with the supremacy in Japan of western methods is striking.

The exhibits of the Latin-American nations were attractive and instructive, particularly that of Cuba where the steady growth from the impetus given by American occupation is gratifying, and in Argentina where the progress of public instruction in the more thickly settled section and the growth of normal schools are highly creditable. Brazil showed great unevenness, ranging from the excellent administrative system of the province of San Paulo to practically nothing in the northern provinces but unorganized private effort. The same may be said of Mexico, but in each of the four countries were many beautiful and progressive exhibits from higher educational institutions.

Among the other foreign displays two were of marked interest as representing remote but celebrated localities. The Syrian Protestant College of Beirut presented a handsome model 16x10 feet of the grounds and buildings of this college which attracted much attention. The Prince of Monaco made an interesting exhibit of his charts and publications on Oceanography and of famous historical documents from the archives of his palace.

Notable Installations:

The installation of the extensive and important series of exhibits in the palace of Education was of most superior character. In the case of many of the displays the installations were notably artistic. The international jury of awards gave to Germany a gold medal for the most artistic installation and design in the department of Education. The facade of the French exhibit was a very magnificent design worked out in exquisite detail. The English, Japanese, Mexican and Cuban facades were also remarkably beautiful and characteristic of the architecture of the respective nations. In the United States section many handsome installations were presented. Among these may be mentioned the exhibits of California, Pennsylvania, Massachusetts, New York and New York City, Missouri and St. Louis, Colorado, Minnesota, and Iowa. Among the universities whose displays were particularly well installed, were Harvard, Columbia, Cornell, Missouri, Illinois, Chicago, Washington and Wisconsin. In the commercial section also several handsome installations were presented. A lecture hall seating 225 people and fitted with a stereopticon for lantern pictures was a serviceable feature of the educational exhibit and was indicative of the thoroughness of the presentation and installation of the exhibit as a whole.

It was impossible for any person to go from state to state in the United States sections and detect any radical distinction in the work presented or the methods illustrated.

Such as did exist were entirely local in their reason, as evidence of the personality of the superintendent or of the progressiveness of the community. There was no greater difference between Syracuse and Los Angeles than between Syracuse and Binghamton. It was a satisfactory and gratifying condition. The simultaneous advance along any line of progress by a nation vast in extent and power is an impressive fact. It indicates a flexibility of mind and a solidarity of purpose which would be irresistible applied to any problem. There are the same elements of strength in the union of ideas and mental training of every section of a great country as in its physical and constitutional union. At the same time, it should not be understood that there was a stereotyped form of processes in the exhibits. There was enough originality and expression of experiment to insure against any possible danger of machine routine.

The Rise of Technical Education:

The other main point emphasized by the exhibit was the subordination in foreign countries of the humanities to special industrial instruction which was indicated by a preponderance of evidence. Three nations which participated in the Exposition thought it advisable to portray their educational system in a foreign land and in comparison, with other systems, in no other group than in technical and industrial education. In two others the predominance of the exhibits of this class served to accentuate the main point. In the remainder the relative proportion was greater, with the exception of one; and in this one only was there something of, a balance maintained between the two great lines of mental development of the child.

it is not the province of this report to discuss at length the tendencies of European and American elementary instruction. They are based on different aspirations and traditions and require thorough and logical investigation. That the exhibit illustrated these points and demonstrated to a great degree the reason for the divergence, was evident from the study and criticism bestowed upon it by expert and educational thinkers.

One of the lasting features of the exhibit were the twenty published monographs, each of about sixty pages, and each written by an expert, covering all of the main phases of educational effort in this country from the kindergarten to the university. The list of authors comprised some of the most eminent persons in the educational history of this country, such as William T. Harris, Andrew S. Draper, Susan E. Blow, Andrew F. West, Elmer M. Brown, M. Carey Thomas, and others. The entire series was edited by Nicholas Murray Butler, president of Columbia University. This series of monographs was given free distribution among those interested in educational work.

CHAPTER III

SOCIAL ECONOMY

A New Department—Progress Since the Columbian Exposition —Problems of Mankind—Industrial Organization—Charities and Correction—The Public Health—A Model Street—The Playground —Settlement Work

PERHAPS the advancement most marked by the exhibits at St. Louis, as compared with the co-ordinate displays of 1893, was in the evidences of attention now being paid by the government and the American people, as well as other nations of the world, to economic questions, conditions of industry and labor, civic improvement, public health and kindred subjects. Possibly no branch of social investigation or activity merits or is receiving more general and careful attention throughout the world than these inquiries into the welfare and progress of mankind, especially including the relationship and habitations of members of society, that are assembled and coordinated under the head of Social Economy. This subject was considered of so much importance by the exposition management that the recommendation it be made the topic of one of the principal departments of the Exposition was readily approved and its institution as a department promptly authorized and provided for.

The exhibits assembled under this heading were of a character of no less direct value and significant interest than those of the department of Education, in the same palace with which they were installed, and were set forth with such effect as to be the subject of universal comment and to draw the attention and elicit the commendation of visiting specialists and students from all parts of the world. In addition to the exhibits presented in the palace of Education special important features of the subject of Social Economy were illustrated in an elaborate auxiliary outdoor exhibit in the form of a model street built upon the exposition grounds with model paving, model fountains, model lighting, model buildings.

Principal cities and states of the United States contributed to the general display which was participated in also by the following foreign countries: Belgium, Brazil, Bulgaria, Canada, Cuba, France, Germany, Great Britain, Italy, Netherlands, Japan, Mexico, New Zealand, Nicaragua and Russia.

In the organization of the exhibit the advice of the leading authorities of the country was sought and cordially and fully given - notably that of Carroll D. Wright, F. W. Willoughby, treasurer of Porto Rico, formerly an expert in the bureau of labor; Edward T. Devine, of New York, and Dr. Samuel Abbott, of Boston.

The scope of the department of Social Economy as announced in the offi-

cial classification of the Exposition, outlined with the aid of these gentlemen, embraced thirteen groups according to which exhibits were to be selected and installed as follows: Study and investigation of social and economic conditions; economic resources and organization; state regulation of industry and labor; organization of industrial workers; methods of industrial remuneration; cooperative institutions; provident institutions; housing of the working classes; the liquor question; general betterment movement; charities and correction; public health; and municipal improvement.

These individual groups were assembled into four natural and principal sections: social economy proper; charities and correction; hygiene and public health; and municipal improvements; each of these sections was placed under the direction of an expert.

Department Organization:

Howard J. Rogers, chief of the departments of Education and Social Economy, controlled the general operations of the department and also later assumed direction of the section of social economy, originally entrusted to Carroll D. Wright who was obliged to give up his active association with the department on account of pressure of other duties. The section of charities and correction was placed under the direction of A. E. Pope, of Omaha; that of hygiene and public health under the direction of Dr. J. N. Hurty, of Indianapolis; and that of municipal improvement under Albert Kelsey, of Philadelphia.

To the active interest, industry and discrimination of these gentlemen the distinguished success of the exhibit of the department is due. The following review of the principal features is condensed from the report of Chief Rogers:

The theory of the classification of the department of Social Economy indicated procedure from the general to the particular or special.

Its initial group-study and investigation of social and economic conditions-was an introduction to the whole exhibit and offered the opportunity of showing what was being done by each country through official bureaus, great reform associations, international congresses, expositions, to make known and promote rational reforms.

The second subject group - economic resources and organization - provided for exhibits of industrial organization and resources. In this group especial reliance was placed upon exhibits from the different governments, chambers of commerce, together with charts showing important general facts like production of different products, per capita consumption, national wealth.

The third group-state regulation of industry and labor-included what is done by governments for the regulation of industry and labor. In it were shown the exhibits of factory inspection and mine inspection services, labor legislation in all its branches, devices and means for preventing accidents.

The next group-organization of industrial workers-related to industrial organizations of all kinds. In particular, efforts were made to show the work of employers' associations which had never been done before. Under this group was included everything pertaining to strikes, arbitration and the relation between employers and employee.

The following group-methods of industrial remuneration-comprised exhibits showing all the various ways or systems for sharing the products of industry, different forms of wage systems, profit-sharing, co-operation.

The sixth group - cooperative institutions - dealt with cooperative institutions other than those of producers; such as cooperative credit and banking institutions; cooperative building societies.

The eighth group-devoted to provident associations-included all the various forms of savings banks, insurance against death, accident and sickness; and the various forms of commercial insurance on property.

The ninth group - housing of the working classes-had reference to the various buildings and sanitary regulations to force in the different states; the erection of improved dwellings, either by employee, by private efforts, or by public authorities; and in general, the efforts made for the betterment of housing conditions.

The tenth group-the liquor question-covered the legal regulations and public management of the liquor trade and the efforts, public or private, for lessening intemperance.

The succeeding group - general betterment movements - included the institutions organized by employers for the benefit of employee; social settlements maintained under public or private auspices; the work of humane and other allied societies; and institutional work, church or otherwise.

The eleventh group - charities and correction - covered fully the field occupied by organized charities in this country, including the care of destitute, neglected and delinquent children; institutional care of destitute adults; the care and relief of needy families to their homes, hospitals and dispensaries; care of the insane, the feeble-minded, and the epileptics; and the treatment of criminals.

The twelfth group - devoted to public health - was designed for a comparative exhibit of the sanitary legislation of the various states, dealing particularly with the prevention of infectious diseases, industrial sanitation, general investigation, food and drug inspection, vital statistics, and the burial of the dead.

The last group - municipal improvement - provided for a thorough representation of the best methods of city and village administration in use in this country or in foreign countries. Special attention was paid to the exhibit of public service industries; laws and devices for the protection of life and property; the plans of streets and sewers; the establishment of parks, recreation grounds, public baths, and other means of increasing the beauty and utility of the property of a municipality.

Social Economy Section:

The section of Social Economy proper included the subjects covered by the first ten of the above groups as follows: the study and investigation of social and economic conditions; economic resources and organization; state regulation of industry and labor; organization of industrial workers; methods of industrial remuneration; co-operative institutions; provident institutions; housing of the working classes; the liquor question; and the general betterment movement.

The co-operation of Mr. Wright was of great value and aid in the organization of this section and in the selection of exhibits, which were highly illustrative of each of the subjects presented and which were installed in effective collective order. A number of the states made extensive displays in the section of Social Economy, including New York, Massachusetts, New Jersey, Rhode Island, Indiana, Illinois, Missouri and Kansas.

The United States department of labor and the state bureaus of labor, mine and factory inspection were fully represented and the exhibits of the else department of the state of New York and the tenement house commission of the city of New York were important features. The exhibit of the state of Massachusetts occupied a separate location in which were collected the various units of its representation under these groups. Other import-

ant exhibits were those of the Philadelphia Commercial Museum, American Federation of Labor, Modern Woodmen of America, National Woman's Christian Temperance Union, National Consumers' League, American institute of Social Service, school of social sciences of the Catholic University of America, the Association of Collegiate Alumnae, model household nursery, and the Salvation Army.

A number of well-known industrial concerns submitted interesting and instructive displays of the work being done by them in the way of protection from injury, welfare and improvement of their employee. In this group of industrial and social betterment the exhibit of the American institute of Social Service of New York City was most extensive and instructive. This exhibit, which was greatly admired at the Paris Exposition, was nearly trebled in quantity and extensiveness at St. Louis and told a most complete story.

The display or the American Federation of Labor was a capable and striking illustration of the methods and progress of labor unions in this country during the past twenty years, and of the methods of maintaining the federation.

In the group devoted to the housing or the working classes many important exhibits were presented, among the chief of which were the representative displays covering this subject made by the tenement house commission or the City of New York, the national department of labor, the Boston co-operative building company, and the Association of Collegiate Alumnae. In this section was included also the model household nursery designed to exemplify the equipment of a sanitary nursery suitable for the home and at a cost within the means of families in ordinary circumstances, and a series of exhibits relating to the subject of improved dwellings, material, fixtures, appliances, plans, made by representative associations and prominent manufacturers of the United States. The model household nursery was a typical exhibit of economic and sanitary nursery organization and equipment. This exhibit, together with the exhibit of the Woman's Christian Temperance Union, and the exhibit of the Collegiate Alumnae in household economics, formed a combined exhibit of women's work which attracted widespread attention.

In the provident institution group an exhibit was presented by one of the leading insurance companies, which occupied 1,500 square feet of space, and which was undoubtedly the finest and most valuable collection of statistics on general insurance the world has ever seen. Its method of installation was also most attractive. The graphic charts were a revelation in their beauty, originality, and precise presentation of the evolution of insurance. The entire exhibit was conceived, developed and installed by the statistician of the exhibiting company and received from the international jury of awards a grand prize for its statistical value. Official assurance of this space was given in 1901 and the exhibit represented two years and a half of statistical investigation and preparation.

Many interesting exhibits were also made in this section by principal foreign countries, including France, Germany, England, Belgium, Italy, Mexico and Brazil. In the German exhibit was included an interesting presentation of the history and growth of working men's insurance. The French display which was prepared under the supervision of the eminent leader in social and economic investigation, Jules Siegfried, of Paris, fully covered all of the groups in the section and was a thorough reflection of the high organization reached in that country in this important field. A similar statement may be made in regard to the excellent exhibit presented by Belgium. In the British exhibit a social map of London in 1900 showing the distribution of the poor and criminal classes was a most striking feature. This map was about 20x16 feet in size and represented years of careful sociological investigation.

Charities and Correction:

The comprehensive exhibit presented in the section of charities and correction in the department or Social Economy, was gathered under the auspices of the National Conference or Charities and Correction. A. E. Pope directed the operations of the section. Its general plan and procedure were supervised by a special advisory committee, appointed by the

President of the Exposition. The membership of this advisory committee, which succeeded a special committee of the National Conference of Charities and Correction and which was approved by that body, was as follows: Dr. Charles R. Henderson of Chicago, Robert W. DeForest of New York, Ernest P. Bicknell of Chicago, Hastings R. Hart of Chicago, Dr. Jeffrey R. Brackett of Baltimore, and Miss Mary E. Perry of St Louis.

The scope of the exhibit of charities and correction according to the classification adopted, included the following subjects: destitute, neglected and delinquent children; institutional care of destitute adults; care and relief of needy families in their homes; hospitals, dispensaries and nursing; the insane, feeble-minded and epileptics; treatment of criminals; identification of criminals; supervisory and educational movements.

Prominent in the display of charities were contributions from the following representative sources: the state boards of charities of Indiana, Massachusetts, Missouri, New Hampshire, New York, Pennsylvania and Rhode Island; the medical department of Illinois State University, the Missouri state industrial school; the New York charity organization society; the New York state commission in lunacy; school of social sciences of the Catholic University of America; department of finance of New York City; the New York City tenement house department; the committee on prevention of tuberculosis; Jewish charitable and educational union; Johns Hopkins school for nurses; the children's home society; the Salvation Army, and other humane organizations. The extent and increase of the charity provisions of the various states and cities of this country revealed by this exhibit, including the regular municipal, county and state eleemosynary institutions and special institutions supported by endowment, or by religious, social and other organizations, indicate that we are maturing in civilization rapidly. The displays presented particularly illustrated fully the great development of the organized municipal and state charity systems in this country in the last decade. Perhaps no field of human endeavor has made more rapid strides and has effected more marvelous work than organized charity. The thorough investigating work carried on by the agents of the charities societies and the restrictions which govern the dispensing of funds were clearly set forth.

The exhibit of the Catholic University of America at Washington illustrated the institutional and charitable work maintained under orders belonging to the Catholic church. This exhibit covered the intermediate ground between social economy subjects and charities and correction and was valuable from the concise method in which the work of the church was represented.

The exhibit of the Salvation Army was also most instructive, laying particular stress upon the work of the army in relieving the distressed and unfortunate.

In the hospital class of this section was installed, under the auspices of the American Medical Association, a pathological exhibit collected from the various hospitals of the country and tracing the effect of the various diseases upon the body. This display, studied in connection with the model hospital rooms equipped with full apparatus in the palace of Liberal Arts, constituted one of the most important and instructive of its character ever assembled, and was one of the most complete and representative presented at the Exposition.

In the division of correction, the reformatories and the reform and training schools of principal cities and states, as well as the prison boards of various states, contributed displays setting forth the methods and systems applied by each in the conduct, regulation and improvement of criminals and the criminally inclined. A class of exhibits of especial interest in this section was the juvenile court exhibit which was participated in by the juvenile courts of Chicago, Denver, St. Louis and Indianapolis. This exhibit was assembled under the direction of Judge Benjamin B. Lindsey, of Denver, and deservedly attracted much attention.

The Police Exhibit:

A unique feature of the correction exhibit, and one that had never before been presented at an international exposition, was the police exhibit organized under the auspices

of the international Association of Chiefs of Police. The president of this Association, Major Richard Sylvester, chief of police at Washington, gave especial attention to the preparation of the exhibit and the result was a collection of statistics and working data which attracted universal attention. For the better working of the display the national bureau of identification was removed from Washington to St. Louis during the exposition period. The exhibit occupied the entire southeast pavilion of the Palace of Education and the territory adjacent to it. Participating in this display were the police departments of London (Scotland Yard), Amsterdam, Lyons, Christiana and the Japanese police association. Close to this exhibit was that of the New York state department of prisons, in which the Bertillon and English finger-print systems, also elaborately illustrated in the police exhibit, were thoroughly demonstrated by experts in charge. To the right of the police exhibit was a model jail erected by the Pauly Jail Company of St. Louis, showing the latest improvements and devices in jail architecture, structure and equipment. The Japanese police exhibit was especially instructive and interesting to the American public.

The foreign representation in this whole group of charities and correction was superior and instructive, exemplifying especially advanced European institutions, methods and administration. Numerous famous institutions and associations or France, Germany, Great Britain and Belgium contributed important exhibits covering every phase of the work of these countries in the direction indicated. Other foreign nations participating prominently were Italy, Japan and Mexico. In reviewing the exhibits of the section of charities and correction the international jury used the following language:

Among the most important advances which can be studied with advantage in this Exposition we may call special attention to the following: the anti-tuberculosis organizations or Europe and America; the improvements in the educational and custodial care of the feeble-minded and epileptic; the philanthropic efforts to improve the physical conditions which depress the lives of the poor; the evidence that emphasis is placed more than formerly on prophylactic and up-building measures; the progress in securing co-operation between all the agencies of the cities and states in furthering charitable ends by a clear understanding and exchange of information; the extension or state supervision to local agencies of relief; multiplication and improvement of agencies for caring for neglected and dependent children; improvements in the identification of criminals. We call attention to the admirably complete and intelligent presentation of the work of the Juvenile courts and probation officers in the United States, and of similar work in France and England. The notable advance was brought to our attention by exhibits.

It should be remembered that this very extensive, costly, impressive and instructive exhibit was prepared and installed in very great part by voluntary contributions of philanthropic people, often at a great personal sacrifice, and that commercial and pecuniary returns in very few instances could by any possibility be expected.

Hygiene and Public Health:

In the hygiene section the display was divided into four classes: first, a collective exhibit from state and municipal health departments, demonstrating the laws in force in said cities and states, and the means employed for the prevention of disease. Second, foreign hygiene exhibits in which Germany, Cuba and Japan took a prominent part. Third, exhibits of serums, vaccine and anti-toxins, and of instruments and equipments. Fourth, a working hygiene laboratory in which were duly carried on tests of serum cultures sent in from surrounding towns and cities.

The exhibits of hygiene under these divisions assembled under the direction of Dr. J. N. Hurty, of Indianapolis, were among the most representative and interesting at the Exposition. Seven cities and twelve states of the United States and eleven foreign countries participated in this important section as follows: Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Maryland, Illinois, Indiana, Florida, Kentucky, Louisiana, New Jersey. Cities - New York, Boston, Chicago, St. Paul, Cleveland, New Orleans, Rochester. Foreign countries - Great Britain, France, Germany, Mexico, Canada, Japan, Italy, Cuba,

Brazil, Belgium and the Argentine Republic. The foreign exhibits were especially important and interesting. From Dr. Hurty's report the succeeding condensed references to principal features of this extraordinary display are made:

In the United States section, the exhibit of New York City was very extensive and very fine. It covered almost every phase of sanitation from street cleaning and garbage disposal to the direct prevention of infectious diseases and the building of Christian-like tenements. Twenty-two leaf cabinets were filled with charts, statistical tables, graphic diagrams, photographs, health pamphlets and copies of the many blanks used in collecting statistics and sanitary data and keeping track of officers. The work of the board in the prevention and treatment of tuberculosis was made prominent. There were made 12,514 tuberculosis inspections in 1903. The renovations with fumigation numbered 1,338. There were reported 10,247 cases and 193 were removed to the hospital. Dre. Briggs, Darlington and Lederle were the prominent collaborators in producing the exhibit.

The Chicago exhibit filled three leaf cabinets and four large specially made albums. The milk work of the department, with its results of lowering the infantile death rate, was fully shown by descriptions of the methods of dairy inspection and milk analyses and the keeping of records. The infectious disease work done under Dr. Heman Spaulding was attractively illustrated. There were made 76,473 throat cultures in 1903, and 6,427 bottles of anti-toxins were distributed, and something over 200,000 public vaccinations were made. In no other city does the medical profession lend more efficient aid to the public work of disease prevention. Medical inspection of school children, with blanks, records and results were shown in simple and lucid tables and charts. A great compliment to the Chicago exhibit lies in the fact that Dr. van Kerckhoff, one of Holland's authorities in preventive medicine spent several days in studying and taking notes on it.

Dr. Ohage, health officer of St. Paul, presented the exhibit of that city, effectively arranged on tables end in cases. He showed photographs of parks, public baths, and public children's playgrounds, each picture being three feet long and eighteen inches wide. He also showed statistics, charts, diagrams, maps, method of reporting diseases and deaths, disinfection processes and disinfection apparatus, and the workings of the laboratory. A map of St. Paul occupied the center of the wall space and on it appeared each morning a colored pin record of each quarantine, inspection and disinfection of the day before.

New Orleans filled two of the regulation leaf cabinets, each containing thirty-two pages 22x28 inches. Of particular interest were the blue prints and descriptions of the new sewer system, the methods of sewage disposal and the new water filtration plant. Two pamphlets were especially prepared for distribution at the Fair, pertaining, the first to the laws, rules and workings of the board and results obtained; and the second to "The Problem of Mosquito Destruction." Both pamphlets were highly interesting and creditable.

Boston's two leaf cabinets contained the pictures, charts, tables of statistics, blanks, diphtheria sputum and other outfits of the laboratories. The quarantine at Gallup's island was illustrated, and the methods of management of infectious diseases and results plainly set forth.

Rochester and Cleveland each used one cabinet. Cleveland's exhibit was very creditable. Rochester, in addition to making the usual showing, illustrated the unique and successful method of securing clean dairies and clean milk which was originated by Dr. George Goler. This work cut down the infantile death rate of Rochester over 30 percent in the past three years as compared with the preceding three years.

The exhibit of the Indiana state board of health was contained in three special exhibit cases. There was shown: copies of the state health law; health ordinances of cities and towns; rules of the state board; a description of the Indiana method of collecting, tabulating, analyzing and publishing vital statistics, together with a full set of the blanks used for such purposes; a set of pamphlets upon the prevention of consumption, diphtheria, scarlet fever, typhoid fever, smallpox, measles and diarrheal diseases, which were for free distribution; a set of the annual reports of the state board since 1881, the date of its organization; copies of a book of instructions to state health officers; elevation, plan and specifications of sewage disposal plants at Eastern Insane Hospital, Northern Insane Hospital, Boys' Reform School, and Rome City; photographs and descriptions of water filtration plants at Terre Haute and Vincennes; photographs and descriptions of sanitary plants, paved streets, parks, sewer systems and sanitary work in Indianapolis, Fort Wayne, Richmond, Lafayette, South Bend, Terre Haute, Vincennes and Evansville; statistical tables and charts showing deaths from certain causes by months and years; and a typewritten account of the methods employed of doing general sanitary work.

The exhibits of the state boards of health of Massachusetts and New York in this group were interesting, as were those of the health departments of Connecticut, Illinois, Louisiana, Michigan, New Jersey, Pennsylvania and Rhode Island.

Hygiene in Germany:

The most important, complete and beautiful exhibit of the hygiene and public health section was that presented by the imperial board of health of Germany (installed in the palace of Liberal Arts) and superintended by Dr. Med. Breger, commissioner of the board. The cost of preparing and collecting this exhibit was something over \$10,000 and it covered 4,312 square feet. This area was divided by partitions into three side rooms of varying dimensions. The fourth side being absent afforded easy access to the articles shown in each room. Due attention was given to the artistic effect; the coloring of the walls always harmonized with that of the pictures, charts, tables of statistics, models and all exhibited articles.

Twenty-two swinging quartered oak frame, about a heavy carved oak post served to show conveniently

the tuberculosis sanatoria of German. Ninety such institutions were shown by detailed plane and complete elevations, and in instances by paintings. These sanatoria contain 5,000 beds. An average of four patients are treated in each bed each year, making a total of 32,000 patients annually. The cost of the institutions was over 40,000,000 marks, or \$10,000,000.

The character and extent of the milk supply of the German Empire was illustrated by diagrams showing the annual milk consumption per capita, by graphic charts showing the chemical and bacteriological composition, by charts showing its distribution by rail, by water and by carts. Statistical tables and graphic charts of infantile deaths from diarrheal diseases before and since the institution of hygiene milk control show its great worth. Complete and very artistic large models were shown of public water filtration plants and of sewage plants. A glass case ten by fourteen feet contained a complete model of the sewage farm of the city of Dortmund. The collection and utilization of garbage was illustrated by models of plants showing the extraction of fat and conversion into fertilizer, and by statistics and graphic charts. A model of the wagon used for the collecting of street dirt in Berlin was exhibited. It is tightly covered, and the street dirt, being first shoveled into a metal pail, is passed from the pail through a trap into the tight wagon bed without spilling and without loading the air with dust. In this, and down to the minutest thing, they practically apply the old observation: "What is worth doing at all is worth doing well." In the street cleaning exhibit, there were also shown charts and data concerning the cost, quantity of sweeping removed, distances hauled, and number of men, wagons and horses required to a given area.

The exhibit illustrating baths was a revelation. There were shown models of baths in schoolhouses, models of public baths, also pictures, plans and statistics, with cost. A complete food laboratory was shown in the palace of Agriculture and an equally complete bacteriological laboratory was shown in the palace of Education and Social Economy.

The very great importance of vital statistics to medical science and to the state is understood and appreciated in Germany. Besides tables and graphic charts showing the vital statistics, there were shown block models of wood of differing sizes and vari-colored which vividly illustrated the relations of births, deaths and diseases by ages, sex, social condition and occupation. As a result of the practical application of sanitary science it appears from these statistics that the mortality in cities containing over 15,000 inhabitants was reduced from 27 in 1,000 to 19.7 in twenty-five years. In 1901 only one person in 1,000,000 died from smallpox and typhoid fever, while in 1877 respectively 6 and 16 times as many died. The number of deaths from puerperal fever has been reduced to one-third of the original number - from 15.4 to 5.5 in 100,000 annually and diphtheria, from 104 to 27.

Three most complete laboratories, all necessary to modern public hygiene administration, were exhibited. One was for food and drug analyses, one was bacteriological, and one for sanitary chemical work. The perfect arrangement, the completeness and the finish of these laboratories were calculated to open one's eyes. The prominent idea was not how cheaply they can be furnished but how complete and perfect they can be made.

In the German hygienic exhibit in the palace of Education and Social Economy were shown sera and vaccine, photographs of cases of leprosy, smallpox, scarlet fever, cancer; charts, pictures and statistical tables showing hygiene work in relation to all the infectious diseases; pamphlets on disease prevention, and a variety of pathological specimens; wax and papier-mache models which were almost bewildering. Adjoining this was a completely equipped lecture room furnished with Zeiss's new epidiascope and episcope.

The Cuban exhibit under the charge of Drs. Luis and Taylor consisted almost entirely of illustrations of the classical experiments whereby it was discovered that the *Stegomyia* mosquito is the bearer of the yellow fever infection. A model of the famous Las Animas hospital was shown with its entire absence of glass windows, the window frames being filled solely with fine mesh wire-cloth. Photographs and descriptions of the officers of the superior board of health, exterior and interior, were shown. In a small room, all aides being of wire netting and entered through a vestibule or trap, were shown several different varieties of mosquitoes in all stages of development. The *Stegomyia*, small and with its body parallel with the glass, was shown side by side with *Anopheles*, which stood with spotted wings at an angle. The drawings and photographs showed how the insect in biting inserts six weapons at once. It is twelve days after the mosquito takes in the infection before she is capable of imparting the disease, and in order to herself acquire the infection she must bite the patient within the first three days of the attack. One mosquito has been known to transmit yellow fever sixty days after it was infected. Before the mosquito discovery by Finley and its practical application, there was a period of 145 years in which Havana was not free from yellow fever. During the three years preceding this report, not one case had originated in the city, the freedom from the plague being secured by destroying all the mosquitoes possible, and by taking such other precautions as would absolutely prevent the propagation of the disease.

The Japanese hygiene exhibit occupied a space of only 600 square feet in all, yet it is astonishing what was shown in that space. Three walls of a room (one side entirely open) were covered with statistical tables in regard to diseases and deaths in Japan, with pictures, diagrams, graphic charts and maps. One glass case about 10 feet wide, 15 feet long and 10 feet high, occupying the center of the 20x30 foot room, contained a most comprehensive exhibit of this character. Here appeared work of the Japanese institute for infectious diseases, the serum institute, and the lymph institute. Prof. Dr. S. Kitasato is the founder and president of all these institutions, each being in separate buildings and each having its own set of scientific workers. Prof. Kitasato was the joint discoverer with Prof. Behring in 1892 of the serum treatment of disease. He also first made a pure culture of *tetanus bacilli*; is the discoverer of the pest bacilli, and the inventor of many laboratory methods and of several kinds of apparatus, known in all laboratories by his name. Kitasato showed his experiments by which we are now able to keep up the vitality of vaccine lymph. In this illustration a stuffed calf was presented having

upon its body scars showing the location of typical vaccinal vesicles produced by the intravenous injection of his perpetual lymph. To illustrate the improvements made by Dr. Oshida in the matter of inoculation for hydrophobia, a stuffed rabbit was shown with a syringe having a needle point attached passed through the optic foramen beneath the dura mater. This method is much superior to trephining. The statistics show that 428 persons received treatment for hydrophobia at the infectious disease institute between July 1897, and August 1903. Only two of this number died. Laboratory work in studies of typhoid fever, dysentery, tuberculosis, leprosy, erysipelas, malaria and beri-beri was shown by toxins, serums, antitoxins and vaccines.

The Turning Villa:

France was represented in the hygiene exhibit, as were also Belgium, Great Britain, Mexico, Italy, Brazil, Canada and the Argentine Republic. France had fifteen entries; some of the articles were from Paris, but Paris as a city made no exhibit. The "alliance for the progress of social health of Paris" illustrated its work by pamphlets and charts. The "Bordeaux charitable institution for the giving of cheap shower baths" showed its work by pictures and statistics. It appears that the institution gave 1,136,272 baths at five cents each in 1903. The methods of disinfection were made clear by models and illustrations. An unusually interesting exhibit was that of "The Turning Villa" of Dr. Pellegrim. This is an octagonal house of two stories which turns with the sun. A pamphlet describing it related:

"The Sun-Villa is habitation which shows ever its front to the sun; from its rising till its setting; it is also called the Turning Villa."

Great Britain had five entries in the hygiene section. The census returns were interesting and instructive, and the metropolitan asylums board, London, made a good showing of the work done by diagrams relating to infectious diseases in London and by maps and a vaccination table. The Cambridge University press showed publications on hygiene.

Italy had three entries. The "Institute of Vaccination, St. Marla's Hospital," Florence, gave in an interesting way illustrations by photographs, prints and charts, the methods and results of work. The publications of the hygienic and zootechnic institute of the Royal University of Pisa were represented by ten volumes and pamphlets.

Mexico exhibited statistics only. They were presented in perfectly constructed tables, charts and diagrams. The tables prove the high effectiveness of vaccination with human virus. Dr. Eduardo Liceaga, the president of the superior board of health of Mexico, has little faith in the protective power of animal vaccine which is propagated in the sub-tropics. He stands for human virus which is taken only from healthy children.

Belgium had three entries in this exhibit. The first was that of the general direction of hygiene and public health and consisted of reports concerning the sanitary legislation of the kingdom, prevention of infectious diseases and action of the state to amend the sanitary conditions of the workshop, and notices of the state's inspection of the fabrication and sale of food products. The exhibit of the Ligue Nationale Contre la Tuberculose consisted of reports and descriptions of the work done by the league.

Brazil had ten entries. The exhibits were illustrations of how disinfection is accomplished, management of isolation hospitals, sanitary inspections, publications, statistics, photographs of the sanitary department and laboratories, and a case of serums and vaccine.

Argentine and Canada presented exhibits of the treatment of tuberculosis.

A working hygiene laboratory-a part of Dr. Hurty's general plan-was installed in connection with the hygiene exhibit and placed under the direction of Professor Severance Burrage, of Indianapolis. The equipment of the laboratory, which represented a model municipal plant and illustrated at what small cost such a plant could be installed and maintained, was complete in every respect and was supplied in large part by exhibitors. Its operations were in a high degree successful and proved particularly attractive to exposition visitors. Of these operations Prof. Burrage made a very interesting report, from which the following brief review is presented:

From the opening of the laboratory about the first of July until the close of the Fair informal

explanations were made to small groups of visitors as they would collect in or about the space embracing it, indicating the sources of many diseases and the means of their prevention. These informal talks were always illustrated with the aid of the microscope, through which specimens of the various germs were shown, many of which were taken from specimens left by previous visitors to the laboratory.

Several analyses were made of the air in the palace of Education in the vicinity of the laboratory and the air outside. The results showed that the air in the building was very heavily laden with dust containing bacteria and moulds. The air outside of the building was comparatively free from bacteria and dust but contained a large number of moulds. The results of these analysis as well as the apparatus used in making them were kept on exhibition and explained to the visitors as they evidenced an interest in the subject. Analyses were also made of some of the drinking water supplied upon the grounds. The city water, a modified form of the Mississippi River water, appeared to be a safer water to drink, judging from these analyses, than any other water supplied upon the grounds.

During the summer a great deal of diagnostic work was done in the hygiene laboratory, the diagnoses covering cases of malaria, typhoid fever, diphtheria, consumption and venereal diseases. This work was done entirely free of charge and the diagnoses made in many instances in the presence of the person being examined. The Marine Camp, located just east of the palace of Liberal Arts, was a prolific source of cases of malaria, as many of the troops had come more or less recently from Panama and the Philippines. Nearly all of the cases outside of the marines gave negative results, indicating in a general way that many of the cases of so-called malaria which we have here in the northern states are not the true malaria at all but are probably due to some organic disturbance.

A number of specimens of material were sent to the laboratory through the mall by visitors who had previously witnessed its operation. All of these analyses and diagnoses were made in the presence of the public and the methods of work could be clearly seen.

During the operation of the laboratory many demonstrations were made aside from the above recorded analytical and diagnostic work, showing how various diseases are spread and bow with certain precautions many diseases can be prevented. Among the most interesting of the demonstrations was the one which illustrated the power which flies have of spreading disease by gathering filth upon their legs and bodies and flying from one place to another infecting food and other material.

The classes of people who took the most interest in the work were physicians, trained nurses, school teachers and medical students, all of whom undoubtedly received information of value to them. But perhaps more important still was the impression left upon the minds of the visitors who had not seen living cultures of disease germs and who had never seen living bacteria through the microscope. Having seen these vital causes of disease, more precautions may be taken by them in the future in regard to cleanliness and other preventative measures.

Another working exhibit in connection with the section of hygiene and public health, and one of the foremost importance, was a serviceable garbage crematory. This plant, which was installed as a working exhibit by the Dixon Garbage Company of Toledo, under conditions negotiated by the chief of the department of Social Economy, was employed by the exposition company in the regular work of reducing the garbage collected upon the exposition grounds, and gave excellent service.

The Model Street:

In the section of municipal improvement, a most interesting and novel exhibit was made, partly under the supervision of Albert Kelsey, in the form of the Model Street. This unique thoroughfare led off from the Plaza of St. Louis several hundred yards, north of the palace of Manufactures, and paralleled that exhibit palace to the Plaza d'Orleans. It contained many interesting and illustrative structures erected by various cities and private enterprise, the nucleus of which was the Town Hall.

Immediately east of the Plaza of St. Louis and on the north side of the street was the New York City building, which was strongly reminiscent of the City Hall of New York, and which was used both as headquarters for citizens of that municipality and for the exhibits of the departments of public works, docks, and street cleaning. Exhibits of subways, tunnels, approaches, terminal facilities and industrial and commercial features were also presented here. To the energetic commissioner of the City of New York, Thomas W. Hynes, is due the credit not only for the erection of the building but for the planning of the complete instructive exhibits installed.

Next to the New York building on the north side of the street was the San Francisco building representing the Union Ferry building, of San Francisco, whose tower was one

of the minor points of interest in the architectural features of the grounds. The character of the exhibits within was mostly to demonstrate the commercial and industrial advantages of the great western seaport. On the opposite side of the street were the building of Kansas City and the Twin City building of Minneapolis and St. Paul. The Kansas City building was designed by the firm of Van Brunt and Howe of that city and was one of the most attractive small buildings not only on the street but in the entire exposition enclosure. Its beautiful and attractive court and the remarkably graphic demonstration of the importance of Kansas City as a railroad center and a distributing point for the West and Southwest were the celebrated features.

The Twin City Museum erected by the joint endeavors of St. Paul and Minneapolis had in general appearance the character of a public museum and contained within its walls a careful descriptive exhibit of the manufacturing and transportation facilities of the two enterprising cities of the Northwest. To Mrs. Conde Hamlin, of St. Paul, is due the credit for the erection of the building, and as hostess she gave direct supervision to the installation of exhibits and the reception of visitors.

The building of a prominent correspondence school, designed as a guild hall, was very attractive as well as its working exhibit therein. A drug store and a number of restaurants of unique and attractive design stood at intervals along the street.

The Town Hall, the contribution of the Exposition Company, was the feature of a central public square. It was designed by Albert Kelsey, of Philadelphia, and suggested in many essentials Independence Hall. It was a much admired and highly creditable structure not only from a purely architectural standpoint but from its function as a pivotal point of the street. A prominent and much-admired feature of the building was the Civic Pride monument which arose from the basin of the fountain in front, all of which formed a part of the approach to the building. This monument, which by many was considered the finest piece of statuary on the exposition grounds, was designed by the sculptor, J. Massey Rhind, and was commemorative of the prominent young landscape architect cut off in his early prime, Charles Eliot, of Boston, son of President Eliot, of Harvard. The design of the figures at the base represented inspiration holding out the torch to Genius, both figures separated by a form of brutal strength representing greed and ignorance. The figure on the pedestal above represented in its classic repose and serenity the ideal condition of civic affairs. The inscription at the base of the monument was a quotation from T. Jefferson Coolidge: "in any city, town or village where men and women give jointly and freely of their wisdom, strength and substance to achieve and maintain appropriate beauty in the surroundings of public and private buildings, the visible perfection of a place whose ways are ways of pleasantness, and all whose paths are peace, bears witness to the enlightened civic pride of its inhabitants."

Model Road Making:

Striking features of the Model Street were the various kinds of paving used in the construction of the roadway. Beginning with the Plaza of St. Louis, a Boston manufacturing company laid as an exhibit 250 linear feet of the street with granite bituminous paving. Continuing, a St. Louis company laid a strip of 200 linear feet. Adjoining this the Exposition Company laid 160 feet of macadam. The roadway across the square, 200 feet in length, was laid by a prominent asphalt company. The rest of the square was parked in lawns by the Exposition Company. Leading out from the square at the right was 100 linear feet of typical New Jersey roads made by the roads department of that state. The same department, under the direction of R. A. Meeker, erected a pavilion on the east side of the square and laid down a practical exhibit of roadmaking showing its

different stages of construction. Adjoining the New Jersey roads department, a paving company of St. Louis laid 100 feet of paving. The remaining 400 feet of the street was laid down in macadam under the direction of the National Good Roads Convention during the meeting in St. Louis in May 1904.

On both sides of the street were erected at intervals ornamental street lamps, combination street lamps, letter boxes and sign posts, tree guards and trolley poles, several styles of drinking fountains and ornamental fountains, two advertising kiosks, one from Berlin and one from Dresden, Germany, and many other features incident to modern street equipment. An exhibit of septic tanks, also of garbage disposal vaults illustrating auxiliaries of the well-kept city, were installed.

To the east of the public square was assigned a space fronting 250 feet on the Model Street and containing about 32,250 square feet or roughly three-quarters of an acre for a model playground, such as might be maintained by villages or towns at a comparatively small cost. The idea was advanced by Mrs. Ruth Ashley Hirshfield, of New York City, and its development and success were entirely due to her energy and perseverance. The exhibit was financed by Joseph Lee, of Boston, and its maintenance was afterwards assisted by an appropriation made by the Board of Lady Managers of the Exposition.

The playground contained not only a complete outfit for a children's gymnasium and for children's outdoor sports, with shelters and rests, but also had special buildings for the care of smaller children and infants. It provided a convenient place where children of any age could be left by parents visiting the Exposition, with assurance of safety and careful supervision. The playground was a credit to the Exposition and to its originator; in addition to fully serving its purpose as a model of its kind, it cared for over 7,000 children during the exposition period, ranging in age from two weeks upward. Over 1,200 of these were given care free of charge.

CHAPTER IV

ART

A Decade's Notable Advancement—The Permanent Palace—Exhibits by Twenty-seven Nations—Contemporaneous, Retrospective and Loan Divisions—The Method of Selection—Appreciation Measured by Attendance

THE advancement made in art during the last decade has been notable throughout the world. Two marked features of this progress which were distinctly reflected by the Exposition and by its art exhibit are the extension of proficiency in the fine arts over all parts of the earth, the newer sections giving evidence of progress as well as the old, and the more general introduction of the works, evidences and influences of art into the lives of the great body of the public. Greater numbers of people are acquainted with art and more enjoy it and appreciate it in some of its more or less refined phases, and are therefore benefited by its contact by many hundreds of thousands today, than at any previous time in the history of the world.

At no previous exposition did art receive so much recognition and attention as was given it at the Universal Exposition of 1904. In a higher degree than hitherto had been attained, the Exposition in its buildings and grounds was an expression of art, an exemplification of and a tribute to its importance, virtue and beauty. The architectural perfection of the exposition palaces, their sculptural decorations and the masterpieces of the modelers' art set with effect and profusion throughout the exposition grounds, as well as the landscape and floral adornment of the whole, constituted an exposition of art, of incomparable luxury and magnificence.

To these were added the treasures of painting, sculpture and the applied arts from all the principal nations of the world, which were assembled effectively and attractively in the group of palaces which crowned Art Hill, the apex, physically and ethically, of the Exposition.

It was well appreciated by all principally associated in the management of the Exposition that an indication of the advance made and the true position held in art by this country in comparison with other leading nations of the world, at the period in its progress represented by the anniversary of the Louisiana Purchase and the beginning of the twentieth century, would be a matter of the greatest significance and importance. The material as well as the aesthetic value of art in the direction of sound education and social refinement was fully realized as was also the opportunity to extend art impetus throughout the world which is afforded by an international exposition.

All have been aware of the powerful and direct stimulus given to American art by the Columbian Exposition at Chicago in 1893. The activity and advancement in every branch of the fine arts which quickly and steadily followed that

exposition were remarkable. Sculpture, as applied to architecture and otherwise, painting in all of its branches, including mural decoration, all forms of art almost immediately indicated gratifying progress. The art impulse indeed was everywhere; it radiated and was reflected in all directions, extending over the length and breadth of the country. It was especially apparent in improved architecture, in improved newspaper illustration, in increased public interest in art and in notable refinement of the public taste; it represented indeed one of the most distinctive movements recorded in the intellectual and social development of the United States.

This general appreciation of the value and need of art resulting from the Columbian Exposition suggested that a repetition and extension of the salutary object lesson of 1893 could not but be of first importance to the now wide spread and rapidly developing culture of the country. An exhibition of the world's standard and achievement in art would mean added impulse to great possibilities, not the less so to the United States that it was now able to compete with assurance, pride, and honor, holding a position of dignity and respect before the art world.

With this conception the department of Art of the Exposition of 1904 was organized upon a scale and with a sincerity and thoroughness which may be partially estimated from the fact that a splendid permanent structure for art in St. Louis to cost approximately a million dollars, was included in the plans. This central palace and three handsome wings, or complementary pavilions, were provided to house the exhibit. Every other detail in connection with the department of Art was conceived in similar spirit and executed as far as the conditions permitted with absolute fidelity.

Classification of Exhibits:

The exhibit of art was presented in three general sections: a contemporaneous division which included art works produced since 1892-the close of the period covered by the contemporaneous exhibit of the Chicago Exposition in 1893; a retrospective division embracing work produced between 1803 and 1892; and a loan collection devoted to especially interesting works borrowed from institutions and private owners, which represented also periods other than indicated above.

The contemporaneous and retrospective divisions were naturally the more extensive, together embracing the great majority of the exhibits of all nations and containing many items of superior merit. The intention was for these two divisions of the Art exhibit to reflect the progress and present condition of art in the world. In the case of the United States section, the exhibits included in these divisions were particularly representative; certain of the foreign countries, while presenting interesting exhibits most handsomely installed, gave rather more attention to the retrospective than to the contemporaneous phase of their art.

The character of the loan collection was necessarily international. It contained a great number of masterpieces, altogether constituting an extraordinary and comprehensive exhibit which furnished striking evidence of the growth of art interest and culture and the accumulation of art treasures in this country.

Twenty-seven nations in all contributed to the exhibit of art, which was notable, among other things, for the progress in art indicated by the younger nations, particularly by the United States. If the exhibit at Chicago in 1893 gave

impetus to American art, that at St. Louis did more; it set a standard of American performance in art that, while it was a surprise to foreign connoisseurs, will mark an epoch in the art progress of the world. Among international examples and in open international competition, with the products of the world's art on all sides, American artists recorded a triumph at the Exposition of 1904 which must long be remembered and which will contribute an impulse to American and world art endeavor as permanent and pervading as that given at Chicago was positive and immediate.

The combined international display included eleven thousand examples which illustrated almost every branch of art and phase of artistic expression. It represented the work and treasures of over five thousand devotees and lovers of art.

The nations participating in the great display with special collective exhibits were, in addition to the United States: Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, China, Cuba, Denmark, France, Germany, Great Britain, Holland, Hungary, Iceland, Italy, Japan, Mexico, Nicaragua, Norway, Peru, Portugal, Russia, Sweden and Switzerland.

Of these twenty-seven countries twenty had national sections and were represented by art commissions and officials assigned to the charge of their art exhibits. Seven countries had no official national section. Their exhibits were installed in a general international section under the charge of the exposition department of Art.

The great success of the display was due to the careful organization and the splendid energy of the department of Art and of the numerous and distinguished committees from which it received invaluable co-operation. This comprehensive and effective organization was directed by the well-known chief of the department of Art, Halsey C. Ives, from whose report covering the Art exhibit the following review of its principal feature is taken:

The first consideration of the authorities of the Exposition and its department of Art was to devise means whereby the exhibit of the Exposition might be made to surpass in breadth of interest the exhibit in Chicago in 1893 and that in Paris in 1900. To accomplish such a result, a broader classification than had hitherto prevailed at international expositions was considered necessary; it was believed also that such provision would give greater diversity to the exhibits and thus would appeal to a much larger constituency of exposition visitors. Moreover, it was thought that under such new classification certain unjust conditions which have grown up in the art world might be corrected.

The classification finally adopted and formally promulgated by the authorities of the Exposition was heartily approved by leading art authorities and workers throughout of the world. In this classification was incorporated a recognition of the fact that there should be made no distinction between what commonly had been considered as "fine art" and that which had been termed "industrial art." All art work, whether on canvas, in marble, plaster, wood, metal, glass, porcelain, textile or other material - in the creation of which the artist-producer had worked with conviction and knowledge - was recognized as equally deserving of respect in proportion as it was worthy from the standpoints of inspiration and technique.

The principal groups or divisions of the classification covering art objects as prepared for the Exposition of 1904 were: paintings and drawings, engravings and lithographs, sculpture, architecture, loan collection and original objects of art workmanship.

A perfection of the Art exhibit as planned required, first a suitable building or

buildings; second the stimulation of interest in the proposed exhibit among artists and owners of art objects; third careful selection of the best from those art works submitted for exhibition.

Art Palaces:

The palaces for art exhibits were large and well suited to their purpose, although in fact much more gallery space than that supplied could have been used to advantage for the display of excellent exhibits which were offered but which, under the circumstances, had to be refused. The limitation of space was not, however, in any serious degree restrictive or onerous, operating rather to raise the standard of selection and to render the exhibit more refined. As it was, the extent of the exhibit area supplied and employed, wall and otherwise, in the galleries available considerably exceeded that provided for any previous similar exhibition in this country.

Of the four buildings placed at the service of the department, the central, permanent structure of brick and stone was the most imposing in appearance and offered the greatest amount of exhibit area. The dimensions of this building are 170x350 feet and the height of its central nave, which rises above the surrounding structure, 87 feet. In architectural design this main palace is monumental, with classic exterior facades, varied at intervals by graceful ornamentation, and by four handsome entrances, one in each side. The two principal entrances on the north and on the south are of splendid proportions, each emphasized by six great Roman columns supporting a handsome entablature, that on the north bearing sculptured figures in stone.

As arranged, the exhibition area in this building consisted of a central, imposing sculpture court of splendid sweep and proportions which occupied the great nave of the building, joining its two principal entrances, and a series of large and small galleries of ample height on either side - thirty-two in all, affording a total amount of 6,000 linear feet of wall space.

A basement extends under the entire building. Two large students' rooms, or ateliers, provided with north light, and a number of other commodious rooms for office and other purposes - all above the gallery floor - help to fit the substantial structure for a permanent and practical art museum and art school for which purpose it was designed and is intended.

The two lateral palaces, of temporary though stable structure, which flanked the main building on the east and on the west, were of duplicate outline and dimensions, each being 200 feet by 425 feet in extent. These buildings were of design in harmony with the main palace and for exhibit purposes were well arranged, containing a duplicate series of fifty-one galleries of varying sizes, and each with a total linear wall space of 5,424 feet.

The sculpture pavilion stood in the rear of the main art palace. It was also of harmonious and suitable design and of temporary construction. In proportions it was somewhat smaller than the other buildings, though containing sixteen ample gallery sections. Brick, stone and staff were used in the construction of the auxiliary pavilions which in every way, together with the main palace, met the fire-proof requirements and furnished absolute protection for the rare exhibits which they contained.

The interior of each palace was fittingly decorated according to requirements. The treatment of the exteriors of all was likewise effective and attractive, including the handsome landscape and horticultural setting which embraced the entire group of buildings.

To enlist the interest of the art world in the Exposition and its Art exhibit required careful organization and exploitation. A number of trips abroad by officials of the department of Art were necessary and proved very effective. An organization of advisory committees located in the various art centers was of most material aid. In addition to a national advisory committee for the United States, local advisory committees were appointed for the following points in the United States and Europe: Boston, New York, Philadelphia, Washington, St. Louis, London, Paris, Rome, Munich, Florence. While the splendid work

of co-operation of these committees was applied principally in interesting American artists at home and abroad, their efforts were most effective and contributed much to the splendid success of the entire exhibit. The co-operation of a number of the states, and notably Massachusetts, New York and Pennsylvania, which made appropriations, was most cordial and substantial.

The Plan of Selection:

Interest in the Art exhibit among foreign artists, and organizations and institutions, originally attracted by negotiations of the department of Art, was later cultivated and promoted by the representatives of the various foreign commissions and governments taking part in the Exposition.

The task of making selection of the best among those art works of various kinds offered for display was even more serious and difficult than that of interesting prospective exhibitors. It was universally agreed that the specifications of the exposition classification, if properly carried out, must result in a collection of art objects unparalleled in comprehensive and representative character, that would truly be a reflection of the art activity, progress and position of the various countries of the world. To secure adherence as closely as possible to these provisions of the classification, as well as in the important and delicate work of selection, to preserve the highest standard of excellence among the accepted exhibits, and at the same time to eliminate any possible shade of partiality as between works offered by competing artists, the department of Art devoted itself with painstaking care. To choose the exhibits of the United States sections, expert juries of selection were appointed to pass upon all art works offered at the various centers in Europe and America already mentioned and to represent which advisory committee had been appointed-the juries being made up chiefly of members of the respective advisory committees. The personnel of these committees and juries was most distinguished, their combined membership representing a very large and important proportion of the leading artists and art connoisseurs of our country.

A similarly careful method was applied to the selection of exhibits offered by foreign artists by the art representatives of the various foreign commissions and participating governments.

These preliminary arrangements and provisions faithfully carried out returned a result that was most gratifying; securing for the Exposition an exhibit in all branches of art at once superior and comprehensive.

The exhibits of the United States of every character, painting, sculpture and applied arts, were installed in the main permanent art palace; the works of sculptors being handsomely presented in the main sculpture court and the paintings in the capacious adjoining galleries. The two lateral pavilions were devoted to the foreign exhibits which were grouped separately and installed characteristically in national sections. In the east pavilion or wing were assembled the exhibits of Great Britain, Germany, Holland, Sweden, Austria, Canada, and the international gallery containing exhibits from various countries not otherwise represented. The West pavilion was occupied by exhibits of France, Italy, Japan, Belgium, Russia, Portugal, Hungary, Bulgaria, Brazil, Argentina, Mexico and Cuba. Four galleries in the central building upstairs were also devoted to the Russian exhibit, the space available in the west pavilion being insufficient.

The exhibits of applied arts made by the various countries were displayed in the galleries with or adjacent to the exhibits of paintings, on walls in handsome cases, or as otherwise required.

The exhibits of sculpture from foreign countries were, in some cases, presented in the galleries containing paintings, but were chiefly installed in the Sculpture pavilion at the rear of the main palace of Art.

For the installation of certain special exhibits, original objects of art workmanship,

smaller works of sculpture, carving, special space with side lighting was provided. Including these side-lighted galleries, the main sky-lighted galleries and the sculpture court, a succession of one hundred and thirty-four galleries of art exhibits were presented to the public. Handsome furniture was provided for the respective galleries and courts, including exhibit cases, pedestals and seats.

The United States Exhibit:

The United States section of the Art exhibit contained 3,648 works of art, representing 1,242 artists, divided as follows: oil paintings, 903; water colors and pastels, 313; miniatures, 89; mural paintings, 112; drawings for illustration, 177; etchings and engravings, 267; wood engravings, 70; sculptures, 369; architectural drawings and studies, 289; applied arts, 945; loan division, 124.

Every care was exercised to fittingly install this extraordinary array of exhibits. The walls of all the galleries of the United States section were decorated with brocade effects in jute, in colorings of soft red, pale green, and buff, with friezes of original design echoing the colors of the walls. The two larger galleries were decorated by Charles S. Holloway in a scheme involving seated female figures with garlands, and cartouches containing the names of prominent American artists deceased.

In hanging the pictures of the United States section, the effort was made to place each work so that it would be enhanced by its surroundings. Certain pictures were hung in galleries where the decorative color scheme was to their advantage. Again, each wall was treated from the standpoint of artistic composition as to the size of pictures, their subjects and their colors. A carefully studied and harmonious balance was aimed at on every wall in the United States section.

The important work of hanging, in the classification groups of oil, pastel and water color, miniature painting, drawing and illustrations, etchings, engravings and lithographs, and examples of architectural design, was entrusted almost wholly to the assistant chief of the department of Art, Charles M. Kurtz: the installation of the mural paintings and of the pictures in the loan division was cared for by Will H. Low, superintendent of the loan division: the execution of the scheme of installation in the division of sculpture was entrusted to George Julian Zolnay, superintendent of that division; while the installation of the applied arts examples was directed by Frederick A. Whiting, superintendent of the division of applied arts, who received most valuable assistance from Mrs. Olive Cook Whiting. The work in whole and in each section was reviewed by the chief of the department.

Of the contemporary display made by the United States artists, the splendid list of awards accorded to numerous of its more representative items speaks more eloquently than could any favorable individual criticism. The exhibit was, indeed, such as to excite extraordinary comment, some of which may be considered of special significance as coming from the principal foreign experts in charge of competitive exhibits. Willy Martens, the noted art authority of Holland, in charge of that country's art representation at the Exposition and vice-president of the art jury, said of the character of the display in the United States section: "I should say that there has never been a display of American art as complete as we have seen here. This display has been quite a revelation to us foreigners. It is the marvel of this Exposition that American art is the best displayed in the whole international collection of art." Professor von Petersen, distinguished art critic of Germany and Europe, and member of the art jury, said: "I had the pleasure of making a trip through the United States twenty-five years ago. Then I found American art very full indeed of promise, but I am astonished at what I find upon my return on this occasion—at the wonderful strides that have been taken in so short a time. I am astonished at seeing such a splendid collection of American works of art as I find at this Exposition; so well illustrating the great artistic advance which is apparent to me all through your country wherever I have been, which embraces ar-

chitecture, as well as painting and sculpture-an advance in every field of art achievement."

Preeminence of American Painters:

The exhibits of painting in the United States section included works in oil, watercolor and miniature by almost every painter of individuality and ability credited to this country. Foremost among the great paintings which commanded the attention and respect of intelligent visitors was the famous portrait of Miss Rosa Corder, a work which perhaps more than any other work by Whistler showed the simplicity of charm for which the master was so justly famed.

Another work which although of a style directly the opposite of the Whistler also attracted great attention was the celebrated portrait group of three sisters, the Misses Hunter, a large canvas upon which were depicted three handsome young women. The composition was rendered in a rich scheme of color which gave the artist, John S. Sargent, an opportunity to display his masterly command of technique to the best advantage. Unquestionably the United States section was stronger technically in portraiture than any other of the twenty-seven countries participating. Among other portraits of commanding interest may be mentioned those by Seymour Thomas, a member of the American colony in Paris; Richard Miller; Gari Melchers; Miss Cecilia Beaux; Frederick Vinton; Williams M. Chase; James McClure Hamilton, and Robert W. Vonnah.

Perhaps the works of our artists in figures-those who were recognized as figure painters-which attracted greatest attention were Henry Tanner's, "Daniel in the Lion's Den;" Robery Blum's, "The Lace Makers;" Charles Schreyvogel's, "Custer's Demand;" Walter MacEwen's, "The Chess Players" and "Old Guard House of Orange;" Irving R. Wiles' "Portrait of Julia Marlowe;" George Wetherbee's, "A Summer Sea;" Horatio Walker's, "The Ice Cutters;" Thomas W. Dewing's, "Girl in Blue;" Charles C. Curran's, "At the Piano," and Edmund C. Tarbell's, "The Venetian Blind."

Landscape painting in the United States section maintained the reputation universally accorded to it. Collectors of works by American artists were very generous in lending to the Exposition many strong examples of landscape work. Among the many pictures which commanded the respect and admiration of critics was a large canvas by Emil Carlsen entitled "Late Afternoon." There was a largeness of conception as well as handling in its drawing and values, and in its colors it was dignified and impressive.

Childe Hassam was represented by a group of characteristic works, chief among them his "Church of Old Lynne." Winslow Homer contributed two characteristic canvases "Early Morning" and "Weather Beaten." This latter canvas represented a broken mass of brown and gray storm-beaten rocks upon which the angry surf of the mighty Atlantic was sounding. The lowering sky was a heavy gray tone relieved by a faint glow of rosy color at the horizon. The composition was filled with that strength of expression and movement for which the artist is famous.

John W. Alexander was represented by a series of eight compositions exemplifying the full range of his work from the simply treated portrait to the large canvas upon which he had painted the portrait of Mrs. Alexander - a fine example of the artist's ability to produce a portrait and at the same time create a pleasing decorative scheme.

A valuable contribution from one of our self-banished American artists, a member of the colony residing in England, was "A Water Frolic" by Mark Fisher, one of our artists who has spent most of his professional life in London, where not only has he achieved a material success, but his work has had a marked influence upon a large number of followers. In this picture, "The Water Frolic," one of four from Mr. Fisher's brush, the effect of sunlight reflected from the dancing surface of a pool of clear water, in which a group of rollicking boys are bathing, is represented with a degree of readiness rarely attained by the technical dexterity of the colorist. From the same colony representative work was sent by the late

George Boughton and strong portrait work by J. J. Shannon; from J. McClure Hamilton, came his famous portrait of Gladstone. The vigorous technical expression of character in the portraits and figure compositions by Thomas Eakins commanded the attention of visitors generally,

Among works by Americans in the French colony of American artists of distinction may be mentioned Ogden Wood's cattle piece, a large composition representing an early morning effect showing a Normandy farmer going to market. The details of the picture are carefully studied and well painted, and the effect of the sunlight struggling through the mists that hang over the distant sea and shore is admirably rendered. The whole composition was treated in a harmonious scheme of opalescent tints with an exceedingly agreeable effect. Julius Stewart, the late Edwin Lord Weeks and Frederick A. Bridgman were represented by characteristic figure compositions.

The exhibition of water colorists was of a character to uphold our artists in the place universally accorded to them by art lovers. Works by Horatio Walker, Ochtman, Snell, Fromuth, and Breckenridge were possessed of exceptional merit and their authority were, in each case where not members of the international jury of awards, commended by that body.

The Mural Evolution:

During the last ten or fifteen years many of our strongest artists have devoted their entire time and energies to mural painting. In no other branch of artistic activity in our country has so great progress been made during the last decade as in this field. It was of course impossible to show the finished productions of our artists in this branch, the work of the mural painter owing to its character being executed for a given place, usually in a public building, and when once installed is not capable of being transferred to the walls of an exhibition gallery. To make it possible for visitors to gain a knowledge of the standing our artists have attained in mural work, it became necessary to invite the artists to send the studies for their works and photographs from completed compositions. The efforts of the committee in charge resulted in the securing of a collection which represented the accomplishment of no less than forty-one artists, showing one hundred and eleven examples of completed or projected work and giving evidence of the rapid development of mural painting made since 1893 when the Columbian Exposition in Chicago has presented to a group of American painters the first opportunity to demonstrate American ability to do dignified work in this field. The large alcoves in the sculpture hall of the main palace of Art were devoted to exhibits of this character. Prominent in the display were photographs and color sketches representative of many of the most important decorative paintings to be seen in famous buildings of this country: the Library of Congress in Washington; City Hall, Baltimore; State House, Boston; Appellate Court building, New York City. Among the artists represented were Edwin Blashfield, Kenyon Cox, Will H. Low, Robert V. V. Sewell, Violet Oakley, Henry O. Walker, Frank W. Benson and Maitland Armstrong.

The proportions of the exhibit were less significant than its suggestion. A broad and fruitful field for the painter of large subjects in this country lies in mural decoration. Great canvases in frames are becoming less suited to and will be inevitably in less demand for the houses of modern construction. The picture painted for the frame made by the interior architectural detail of the house itself will it is believed be desired and purchased as formerly when painting was regarded and employed as one of a trinity of arts with architecture and decorative sculpture in the production of a perfect whole.

Mural painting may be said to be the art interpretation and reliance of democracy. On the walls of frequented public building the inspiration of the artist's brush comes into repeated, almost continuous, contact with the passing throngs which make up the people. Unconsciously, perhaps, the spirit of art is absorbed during this association if only in a momentary uplifting, and the impulse of refinement is sent through the land.

Among the miniature painters who contributed works of distinct merit were William J. Bear in his "The Golden Hour;" Lura C. Hills, "Portrait of Miss Persis Blair;" Laura Fairchild Fuller, "The Chinese Jacket" and "In the Days of King Arthur." "The Golden Hour" by Mr. Bear represented two young women of very different types, one as strikingly blonde as the other was brunette. In the background was suggested a landscape with a sky flooded with the rich color of the sunset forming a strong contrast to the refined and delicate treatment in modeling and color of the two heads. This work was most noteworthy and was executed with largeness of manner directly in opposition to that usually employed by miniaturists. The standard fixed by the jury of selection for this class of work was very high and resulted in the bringing together of a collection of works of distinguished merit.

Loan Exhibits:

The loan collection was one of the most interesting features of the entire department of Art as well as one of the most important and popular. Its masterpieces were a steady magnet for the constantly increasing crowds which frequented the Art palaces. The universally high character of its items was attested by critics and public of all nations. Will H. Low, superintendent in charge of this exhibit, reported:

Of the one hundred and twenty-two pictures comprising the loan collection, twenty-six were obtained by the generous desire to forward the interests of the Exposition evinced by George J. Gould. Chief among these pictures was the Rembrandt, one of the master works of the painter and as such treasured during his lifetime by another great painter, Sir Joshua Reynolds; whose portrait of the Duchess of Marlborough hung in close proximity, while grouped in the same gallery were works by Frans Hals and Gerard Dou of the Dutch school; Nattier, a French painter of the seventeenth century, and a circular composition ascribed to Ghirlandajo, an excellent example of the Italian school of the fifteenth century, the period of the awakening of the arts in Italy.

Two excellent pictures of the Dutch school, a beautifully finished landscape by Solomon Ruysdael and an interesting genre picture by Ver Meer, of Delft, examples of whose works are rarely seen, came from the collection of H. C. Frick of Pittsburg; and one of the very fine pictures of Noel Coypel to be found outside of the public collections of France was loaned by Dr. Charles H. Cadwalader of Philadelphia, to whose grandfather it was presented by Joseph Bonaparte when an exile in this country.

Among the more modern painters, the French school prevailed, as it is but just, for the greatest art of the nineteenth century has issued from that country, and in its schools the majority of the men now painting, above all in this country, have been educated. Two admirable examples of Theodore Rousseau—one counted among his most important works; three pictures by Troyon presenting his talent in varied guise; four by Daubigny, of which the "Morning on the Oise," lent by E. Burgess Warren of Philadelphia, was perhaps the masterpiece, though the quality of his smaller works sustained the note of mastery; three of the works of Diaz, the "Wood interior," lent by Charles Parsons of St. Louis, being especially remarkable, and a like number of examples by Jules Dupre, a superb marine, lent by Durand Ruel and Son of New York, among them sustained the reputation won by the Barbizon men, as their school is somewhat incorrectly known. That greatest of the Barbizon painters, the great peasant who passed the latter portion of his life in the otherwise unknown village, Jean Francois Millet, was also represented by three examples, all comparatively small and up to the time of the Exposition unseen by the general public, but all of first importance in their quality. One of these, a small nude figure typical of the painter's earlier work, was from the collection of Dr. H. C. Angell of Boston, and a portrait head, an unusual subject with Millet, and made especially interesting as it represented the painter's wife, was lent by Burgess Warren. A figure composition, "Washerwomen on the Banks of a Stream," came from Miss Gould's collection, completing in its variety a good representation of Millet's work. Single examples, chosen in some cases for their quality or subject, differing from the painter's usual and better-known work, like the "View on the Thames" by Bastien-Lepage, lent by John G. Johnson of Philadelphia, enabled the student of art to study the lesson of diversified effort common to great painters; and from the same collection, two finished studies by Puvis de Chavannes gave the complete composition of two of his great wall paintings in Amiens and afforded an example of the greatest French mural painter.

An effort was made in forming the collection to include a number of men whose work is rarely seen in this country, though in Europe their reputation ranks high. Delacroix is, however, known the world over and the "Abduction by Moorish Pirates" verified in a low-toned glow of color and a composition filled with movement, his great repute; and Gericault's "Study of Horses" was also a fine example of the short-lived master's work. Pictures by Arnold Bocklin and Octave Tassaert and two small works by Chiffart were all virtually unknown to our public though treasured by their owners here, as their works are valued in public and private collections in Europe.

In an assemblage where it may be asserted no mediocre work was shown this report might easily repeat

the published catalogue, but not to mention each picture, a word must be said of the collection within the collection which represented the contribution of Chicago.

Here were to be found several examples of the Scotch painter, Sir Henry Raeburn, and the Englishman John Opie; an important Meissonier, a composition of a number of figures entitled "The Guide," showing a peasant leading a body of cavalry across the country; Dante Gabriel Rossetti's "Beata Beatrix"; the largest of the Troyons shown in St. Louis, a very important group of "Cows in Pasture"; and a portrait of Joachim the violinist, by George Frederick Watts. Two beautiful Corots, pearly and delicate in quality, supplemented the other examples of this master in the adjoining galleries where the "Danse des Amours" and the "Antique Dance-Sunset," forming part of Mr. Gould's contribution, made the representation of Corot's work singularly complete. Chicago, moreover, deserved well of the republic, for the lack of appreciation of American painters elsewhere noted in this report found rich compensation in a group of four pictures by George Inness, each one showing a phase of his varied view of nature, each one a work representative of a great painter in whom we may justly feel a patriotic pride. A "Nocturne" by Whistler echoed the note of patriotism in the group shown in this room, which was formed from the collections of R. Hall McCormick, Martin A. Ryerson, Charles L. Hutchinson and F. G. Logan, all of Chicago.

Consideration of art, no less than patriotism, claims mention of American works in the other galleries of the loan division. Among them were the "Portrait of His Wife" by Williams Page, grave, dignified and restrained, a canvas replete with character, well composed and painted with a knowledge that few of his contemporaries could excel; "News from the Mexican War" by R. C. Woodville, one of our painters virtually unknown to his compatriots, awaiting the day when his rare works, as he died in early manhood, will be sought by a late appreciation of the merit of work like his; the best of the two pictures painted by W. M. Hunt entitled the "Bathers," showing two boys in the water, and an early example of the work of Elihu Vedder, a figure at dawn with listening ear close to the stony mouth of the towering Sphinx, a small picture that was large in its effects of the mystery of the questioner of the unknowable. An early picture by Frederick M. Church of "Twilight in the Wilderness" and a later "Moonrise at Sunset" showed the work of one who after a vogue such as few American painters have known now suffers an unmerited lapse of appreciation which the future may correct. These few examples sufficed to show that the nascent school of today had for its foundation work that was artistically sound in principle and national in character.

To emphasize the cosmopolitan character of the loan division, which was perhaps not its least American quality, mention may be made of the work of Anders L. Zorn, the living Swedish painter. A full-length portrait lent by the Chicago Club, representing one of its former presidents, was a brilliant technical achievement, and perhaps even more spirited and characteristic was his portrait of the chief of the department of Art, Halsey C. Ives.

Exhibits of Architecture:

The exhibition of art work in the classes of architecture, applied art and sculpture was equally strong with that of painting. In architecture, exhibits were made by leading individual architects, also by principal establishments of the United States. The collection of displays submitted embraced a large variety of designs illustrating the different styles of architecture as applied to structures of varying character and size and setting forth in faithful reproduction the details of exterior and interior treatment and decoration. A number of water colors as well as numerous superior photographs were presented in addition to drawings. Examples of public, private and commercial buildings, reflecting the latest achievements, were submitted, also many examples of landscape architecture, all of which reported the marked progress made in this country in architecture since 1893.

Exhibits of the various styles and most advanced forms of architecture of the United States as well as certain foreign countries were present upon the exposition grounds in the main and other exposition palaces, state and foreign pavilions. Many of these specimens were distinctive, notably the palace of Mines and Metallurgy which was indeed a striking and original execution.

A feature apparent in the display of architecture, in addition to the pervading note of vigorous progress, was the emphasis of the utilitarian and its refinement. The suggestion conveyed was that to the United States may have been left the task of combining in highest perfection the useful with the beautiful in architecture. Pressure for the solution of this insistent modern problem is being brought to bear at many points and results are beginning to show through the long line of effort. The evidences of growth in this direction were

notable. An American school of architecture may be called upon to take place among the distinctive creative and refining agents of the world.

The exhibit of sculpture in the United States section gave gratifying evidence of the rapid and substantial advance that has been made by American workers in that important department of the fine arts. Specimens submitted by artists in this country and American artists resident abroad constituted a display of American sculpture that, effectively installed as it was, has not heretofore been approached. The display reflected the material progress that has been made since the Columbian Exposition. It included plaster reproductions and original models of many of the most important works in recent monumental sculpture. The several men who have from the masterly character of their work been brought prominently before the public were all represented. Augustus Saint Gaudens contributed a model of his well-known statue "The Puritan," the original at Springfield, Massachusetts. The statue is perhaps one of the best-known works of American sculpture and at the same time one of the most impressive examples of modern sculpture, strongly expressive of the character of the original Puritan settler of New England. The masterpiece of that promising young sculptor, the late John Donoghue, "Young Sophocles" attracted much attention. This statue is pronounced by many critics unquestionably one of the most remarkable of modern sculptures. For its ideal beauty, for great simplicity and exquisite handling it almost approaches the characteristics of the classic work of the period of Pericles. The statue represents Sophocles leading the chorus after the battle of Salamis, and in its grand conceptions and beauty of form it stands among the few modern works which may be held as one of the most perfect examples of ideal sculpture produced in modern times.

The "Sun Vow," considered Hermon A. MacNeil's most successful production, was a notable contribution. In this work the artist gives a rare exposition of his masterly knowledge of the human form as also his great command of technical skill.

In the Great Sculpture Court:

Numerous works by Daniel C. French, Paul Bartlett, Richard Brooks, Charles Grafly and the brothers Borglum served to maintain the high standard fixed by the works of Saint Gaudens, Donoghue and MacNeil. The collection installed in the sculpture court, reinforced by numerous groups and single figures distributed through the grounds of the Exposition and for decorative features upon the great exposition buildings, gave a standing to American sculpture and impressed our people with the dignity and position of our national sculpture to an extent that no previous opportunity had afforded. Strong contributions of works were made by other well-known sculptors among whom may be mentioned Adolph Weinman, Herbert W. Adams, E. C. Potter, Charles H. Niehaus, Karl Bitter, Hans Schuler, Charles Connor, A. S. Calder, George Barnard, C. E. Dallin, Mrs. Bessie Potter Vonnoh, Isidore Konti, Phimister Proctor, Lorado Taft, and the dean of the profession, J. Q. A. Ward.

Great care was given in carrying out the details of the installation of the works in the sculpture court by Superintendent Zolnay, the result of which was the subject of commendation by the members of the international jury. The various works were placed not only with a view of obtaining the best composition of outline without reference to residence and position of sculptors, but color was introduced as an important factor in the final appearance of the exhibit. Heretofore reproductions and models shown in temporary expositions have been installed just as they came from the various studios, which necessarily resulted in giving the sculpture halls a cold and unsatisfactory appearance. The utilization of color in imitating various bronze patines on certain white plaster statues resulted not only in securing a very harmonious ensemble, but in most cases greatly improved the appearance of the individual works so treated-to which fact the approval of exhibiting artists materially testified.

A comparison of the sculpture works of the United States section with those of foreign countries, including the strong exhibits made by Germany, Italy, France and Belgium

indicated the marked merit of the American display - a fact which was the source of much comment, and which may be regarded with satisfaction by American artists and the American public.

It is a pleasure to be able to state that the greater number of reproductions mentioned as constituting features of the United States section were secured for a permanent collection which remains under the care of the St. Louis City Art Museum in the permanent central building of the department of Art.

The display of applied arts was without question the most comprehensive ever assembled in this country, representing work from the Atlantic and Pacific Coasts, the far South and almost every other section of the country, as well as from many countries of the world, and illustrating many important phases of artistic handicraft. Visitors were given an opportunity to compare the productions of individual craftsmen with those of a number of men working in rotation upon a single object. The public was surprisingly quick to appreciate the difference in the results attained and to realize the superior design and keener artistic feeling in these productions which represented the highest technical excellence without the mechanical quality noticeable in others. The educational value of the applied arts exhibits was second to none in the Expedition. It gave to many thousands a first knowledge of what might be done in the way of beautiful handiwork and to many more a first realization of the great development in the artistic quality of applied art productions reached during the past few years.

The large scale upon which applied art objects were displayed and the constant expressions of appreciation and interest and pleasure by purchasers and those inquiring regarding exhibits constituted conclusive evidence of the important part conceded to the applied arts exhibit by the most intelligent visitors to the United States section.

"The unqualified success of the departure made to show applied art objects in the same galleries with paintings and sculpture," wrote Superintendent Whiting, "has lent a new dignity to the movement for the revival of the artistic handicrafts which will undoubtedly have a far-reaching effect and for which the Exposition has earned the thanks of all craftsmen. All artists appreciate the value of this demonstration not only as a proper recognition of applied arts but as illustrating how an exhibit of the fine arts may be rendered more representative and interesting by the inclusion of worthy and carefully selected applied art objects."

The Foreign Exhibits:

The decorative schemes worked out in connection with the installation of the art exhibits in the foreign sections were characteristic and evidenced the prevailing tendencies in national art of the countries participating quite as strongly as did the exhibits themselves.

One of the surprising developments of the art exhibits was the excellent showing made by the Argentine Republic. The collection was not large in number; but it was carefully selected, both in painting and sculptures, showed an adherence to a high technical standard, and was strong in its imaginative and dramatic qualities. It undoubtedly showed French and Italian influences; but at the same time possessed a feeling of its own, and a tendency toward the development of a national school. So excellent was the effect made on the international Jury, that sixteen awards, two of them grand prizes, were distributed among the twenty-eight exhibitors who contributed to the section. The results are full of promise for the future of art in South America and will cause Argentine participation in future international expositions to be looked forward to with much interest.

The delay in Austria's application for space made it necessary to divide her collection. It was possible only to reserve two galleries for Austria in the department buildings, so that the main part of this collection necessarily was installed in the Austrian national pavilion. This unfortunate disarrangement deprived thousands of visitors in the palace of Art of the opportunity to study the admirably arranged collections brought together under the man-

agement of art societies and the government commission. Unique in the presentation of the work of its independent artists, the educational value of Austria's collection was in marked contradistinction to that of Germany, which had omitted from its installation this important phase of its national art. The majority of the Austrian pictures had a strong decorative quality, the keynote of which could be discerned in the works of Walter Hampel, Mehoffer, Hynais, Schaeffer, Kaufman, Lebedsky, and others, that accentuated this feeling for the fanciful in theme and treatment. The Austrian work generally was brilliant in effect and well-studied. In no section of the department was there greater harmony in the scheme of color in the decoration of the galleries than in the Austrian. The wall colors were delicate in tone, varying from a strong straw color of a slightly grayish cast to a tender mauve. Broken purples and deep grays were also used, the surfaces brocade effects woven in silk. The friezes were of similar tone to the wall color, the designs embroidered in the same tone of silk or in applique. Students or others interested in interior decoration might well have devoted time and study to the scheme of color and method of treatment followed in this series of galleries. The departmental jury showed its appreciation of the artistic excellence of the scheme of installation adopted by the Austrian commission, by awarding it a special gold medal "for the best, most complete and most attractive installation in the department of Art." The display of applied art made by Austria was superior, varied and most attractive.

Belgium's Nine Galleries:

Modern Belgian art was represented by leading painters and sculptors, whose exhibits filled nine galleries in the west pavilion and a section of the international sculpture court. The display, important in the number of exhibits, afforded a comprehensive knowledge of the artistic activity of a people who geographically and by racial affinity are subject to the influence of two of the most powerful of modern European schools of art, the French and Dutch, and are yet able through the inheritance of the old Flemish traditions to preserve their independence and present an exhibit which is distinctly a national creation, reflecting the life and spirit of the people, and distinguished by a brilliant technique. In the landscapes of Heymans, Courtens, Claus, and Buysse, the marines of Farazyn, the cathedral interiors of Delaunoy, and the figure pieces of Laermans, Leempoels and others, with their touch of modern mysticism, and in the sculpture of Lambeaux, Lauwers, and Samuel, among the artists whose work made up the exhibit, Belgian art was, in a pictorial sense, faithfully and strikingly brought before the public. The general scheme of color carried out in the treatment of the Belgian section was of russet and gold, relieved by dark, rich tones of blue in the frieze into which the names of the great masters of the Flemish school were introduced with good decorative effect.

Brazilian art is an actuality as was seen by the exhibit in the west pavilion. While the works showed that there was much to be accomplished in technical advancement, yet there were signs of the growth of a national art along normal healthy lines, in that the artists paint Brazilian scenes and Brazilian people, with a marked national feeling. In Visconti, Brazil possesses an exceptional artist, and the works of Figuerado, Da Silva, Brocos and Weingartner promise well for the future.

Perhaps no country's art reflects the joys and sorrows of its people more vividly than that of Bulgaria. Almost every work which does not show the Bulgarian people's almost childlike delight in living deplete some scene taken from the nation's tragic history. In some instances, the work may have appeared technically crude though pervaded by dignified sincerity. As a whole it faithfully mirrored the prevailing national condition. Side by side with works in which the technical struggles of the artist were apparent, hung such meritorious productions as Vechin Yaroslav's "Shipka Pass," and Mrkvitcha's portrait of "The Late Princess of Bulgaria," a curious incongruity in the ensemble of the collection, symbolizing in its very unevenness the evolution of a people from primitive conditions towards a higher

civilization.

Canada was never better represented at any international exposition. The artistic advance of that country along the lines of slow but certain evolution more nearly than any other approaches that by which our own national art has been uplifted. This conservatism, and yet healthy growth, was shown particularly in the work of Florence Carlyle, Harris, Dyonnet, Williamson, Laura Muntz and McGillivray Knowles.

Cuba's First Art Exhibit:

Cuba, participating in an international exhibition for the first time as a nation, was represented in the department of Art by only a few artists. Their works made a very creditable exhibit, and showed evidence of a vigorous art movement which will no doubt have an excellent effect on the national taste. Romanach, who exhibited in the United States section in the Paris exhibition in 1900, was here shown by a group of pictures of which "The Convalescent" was of real distinction. The works of Melero and Tejada treat Cuban themes excellently.

The French collection as a whole was less representative of the exposition period than of the past, being made up largely of works recognizable as having been presented in previous expositions of the last twenty-five years. It was refreshing, however, to encounter such works as those exhibited by Lucian Simon, Joseph Bail, Cottet, Menard, Monet, Degas, Renoir and Lepine, which shone brilliantly in the midst of works lending no additional lustre to the great names of their authors. The representation afforded by the exhibits of masterpieces of a glorious period of French art shown in the United States loan division was more exemplary of the dignity attached to the art of France, and the influence of France upon the art of the world during the past century. A distinctly favorable impression was made by the collection installed in the applied arts division of the French section. Its variety and excellence of design, and technical treatment in detail, agreeably surprised those who had lacked opportunity to study the recent development of this phase of French art. It commanded the respect of all visitors, notwithstanding that the over-careful and clever finish of detail was often carried to an extent that lessened appreciation of the object as a whole. While very beautiful in its varied forms, and strong in its appeal to the imagination, serving to increase the dignity and effectiveness of the French art display, this collection failed to impress our people as a collection of objects of usefulness. The artists evidently considered that the function of beauty when filled without regard to its application was a sufficient reason for its existence. In sculpture the French section showed representative works by Rodin, Mercie, Bartholdi, Gardet, and Saint-Marceaux. In medallic sculpture there was a notable display, including the beautiful and well-known productions of Charpentier, Chaplin, Dubois, Lefebvre and Dupuis. One scheme of color dominated the galleries of the French section - a neutral red. The frieze, in deep golden brown, blues and red, was from the design of Besnard. Inscriptions were introduced, as also a conventional figure.

German Masterpieces:

While the exhibits of the German section could hardly be said to constitute a representative collection or contemporary art as it really exists in Germany it contained many interesting examples which were effectively installed. Works of an important class frequently seen in the current exhibitions in the various cities of Germany, representative of the influence of Bocklin, Thoma, and other modern leaders - the productions of the independent schools or art, were contributed to the elevation of the general standard. Among the examples which appealed to the visitors versed in art, may be mentioned the masterly expression of marine painting by von Bartels, the admirably painted landscape pictures by Kuehl, the strong examples or portraiture by Lenbach, the well-known and much exhibited museum picture, the "Iron Rolling Mill" by Menzel, and the heads by Richard Muller. In

the sixteen galleries assigned to the section the decorative scheme ranged in character from the most monumental treatment of the walls and details of the main galleries to simple tonal arrangement of wall color in the smaller rooms. The general effect was dignified and serious, and, as above indicated, served to enhance the value of the exhibits. Sculpture was freely placed in the picture galleries - a doubtful practice, but in this instance effective and agreeable. The marked attractiveness of the German section was attributable more to the very effective treatment of the installation as a whole than to the excellence of the individual exhibits. The value of the German exhibits was increased through the assistance of those who made it possible to bring together in the loan collection of the United States section such works as von Uhd's "Holy Night," "The Sermon on the Mount," and the "Sewing Bee in Holland," Gustave Kuehl's "The Organ Loft," and Knaus' celebrated "Cat's Christening" or Child's Party. The handsome exhibit of the applied arts made by Germany was installed in the department of Manufactures and was of the very highest order.

The opinion was freely expressed by those who have familiarized themselves with the exhibits of Great Britain at this and previous expositions that the British display at St. Louis was superior in character to that of Chicago, and much broader and more comprehensive than the representation at Paris in 1900. Men of such world-wide reputation as Millais, Leighton, LaThangue, Orchardson, Clausen, Burne Jones, Alma-Tadema, Watts, Luke Fildes, Herkomer, Farquharson and Macauley Stevenson were represented, and it would seem, indeed, that the art committee had succeeded in bringing together examples of nearly every phase of art work produced in Great Britain. Although the collection of sculpture was confined to works easily transported, a carefully selected exhibit was shown of pieces adapted to be placed in the galleries of the national section, including works of Brock, Frampton, Colton, Reynolds-Stevens, and others equally well known. The applied arts division of the British section comprised a large and praiseworthy collection and afforded for the first time in this country an opportunity, to study the developments of the last ten years in the arts and crafts movement of England. In the decoration of the British section, the dominant colors used were strong reds, with light grays, white and gold in the friezes which were heraldic in character, with details painted in positive colors on a white ground.

In the Holland section, contemporary Dutch art was shown with greater completeness than at any previous universal exposition since that of 1878 in Paris. The representation was rigidly confined to work of the last five years, although unfortunately this restriction excluded the paintings of Mauve and Bosboom. It was to be seen that in the art of Holland the traditions of the glorious period of the seventeenth century still prevail-the sound traditions of direct and continuous contact with nature. Most of the works came directly from the studios, only those representing deceased workers having been borrowed from collections. There were 170 examples of oil painting, 75 watercolors and as many etchings, engravings and lithographs. Sculpture was represented by works such as could be installed in the picture galleries. There was an interesting and instructive exhibition of Delft and Rosenburg ware, and art works in wood, silver and copper. The standard of selection was high, and Commissioner-General Mesdag reported that "the Holland government committee did not admit a single work of art that was not considered deserving of particular attention from the amateur and the general public." The quiet wall covering in the Holland section, of broken greens, yellow and grays, emphasized by dull purples, dark greens and golden browns in the friezes, was in complete harmony and keeping with the character of the exhibits arranged in the eleven galleries assigned to the section.

Care taken in the selection of its works and admirable taste shown in its installation were distinguishing features in Hungary's exhibit. The full strength of that country's art was not displayed; yet every canvas conveyed the chief characteristics of Hungarian art, namely, a strong color sense, well-disciplined and held in check, and a conception inspired by the physical peculiarities of the country and the national life. The famous painter, the late Munkacsy, was represented by three studies of Hungarian life, lent by the government. Laszlo, one of the foremost portrait painters of the country, contributed the well-known

portrait of Prince Hohenlohe. Thorma embodied in his "Departure of the Recruits," perhaps better than any of the others, the characteristic of Hungarian painting above referred to. With the conception of Professor Zala, the sculptors represented were mainly of the younger generation, so that Hungarian sculpture was shown in its latest phase. The excellence of, the picture hanging, and the color scheme of this section, were particularly noticeable and contributed to the good effect of the galleries. Here the artist in charge of the wall decoration broke quite away from the conventional ideas. In the first gallery he resorted to the use of a rich, deep cone of purple, relieved by a frieze of delicate design made up of gold, bluish gray and edges of silver. The general scheme of the second gallery was a deep, rich red, with characteristic work in the frieze made up of strong colors. The third gallery was an arrangement of greens with silver and gold ornamentation in the frieze.

An International Section:

The international section was made up of exhibits by artists from Ceylon, China, Denmark, Iceland, Norway, Peru, and Switzerland. Painting, sculpture, and original objects of art workmanship were represented in the collection, the exhibits of China and Ceylon being interesting mainly from their rarity as the work of oriental artisans of the past. A case of bindings and some fine specimens of royal Copenhagen porcelain made up the Danish contribution. A collection of embroideries came from Iceland. Norway sent artistic tapestries designed by Gerhard Munthe and executed by the museum of Trondjhem, and also a collection of inlaid furniture by Knag. A Peruvian artist sent some miniatures, and a Swiss, two portraits. "Les Secours," by A. F. Schenck, a deceased artist whose birthplace was Schleswig-Holstein, was also exhibited in this section.

Modern Italian art shows a reaction from the sentimental treatment of the obviously picturesque, which had become conventional. The stronger artists have found it necessary if they would impress individuality upon their art to concern themselves with method and technique rather than with theme. We therefore find in the work of Antonio Mancini, Pellizza, Caprille, De Karolis and others, well represented in the Italian section, problems of color and form solved with originality and brilliancy of execution. There is no doubt that the national exhibit of sculpture raised Italian art in the estimation of the American public. The regeneration which has been the outcome of the last ten years was shown to advantage. The work of this period embodies more thought and virility than was generally noted in Italian sculpture previous to this Exposition. Such work as the "Farinata Degli Uberti" of Carlo Fontana, and "The Man With a Hoe," by Achille D'Orsi, and the Doctor Jenner by Montoverde cannot fail to leave a deep impression on the art movement of that country. The most encouraging feature of the sculpture exhibition was the elimination of those very unsculptural genre works so frequently seen in Italian exhibitions hitherto, but now relegated to their proper environment among exhibits of manufacture. The galleries which formed the Italian section were treated in a manner quite original. The fabric used as wall covering was delicate in texture and rich in color. The friezes were of appropriate design, embroidered in the most harmonious colors.

The Art of Japan:

It was desired that the art of Japan, admittedly one of the most potent influences in directing the trend of western art expression, should be given a place commensurate with the position of strength and dignity which it has attained in the schools of the world. It was realized that proper adherence to the classification governing the art exhibit by the Japanese committee in charge would afford a rare opportunity of studying Japanese art in all its branches, to an extent hitherto impossible in this country. Early in the work of organization those Japanese gentlemen associated with the chief of the department in art exhibition work in the United States previously were urged to use their influence to bring

together a collection representing truthfully the purely national in character; not a collection of what the Japanese believed the Americana cared for most in Japanese art, nor of what would show their versatility, however skillful, as exemplified in the employment of western methods of painting-but a collection of what, in the opinion of the most intelligent people of their country, stands for their best art, especially that being produced at the present time. The result was not disappointing. Availing of the broad classification, Japan sent a very carefully selected and excellent collection of art works. The idea of presenting a purely national exhibit was carried by Japan to the extent of excluding from her principal galleries works painted under the influence and training of western schools. Examples of the latter work, however, were hung in a separate gallery. Compared with the more characteristic work of the truly national section, they served to throw into sharper relief its refinement of feeling and delicate but broad technical qualities, and to this extent proved an object lesson of high value to visitors. To those familiar with the beauties of Japanese art it was a pleasure to study a national collection from which had been eliminated all work of foreign technique. It is a source of regret to observe a strong tendency, shared by so many of the younger Japanese, to forsake the purity and fine qualities of their native art for characteristics, the outgrowth of a civilization and educational training opposite to their own. The Japanese section comprised seven spacious galleries. The decorative appointments were thoroughly characteristic. The general scheme of color showed positive tints, green and blue predominating. The friezes were the work of Japanese artists and were done in place, directly on the walls. The old school of painting was well represented by Hashimoto Gaho, Masao Oejo, Imao Keinen, and other leading artists; that of sculpture by Yamazaki Choun, Kanejiro, and others; ceramics in part by Miyagawa Kozan, Kato Tomoturo; bronzes by Okazaki Sessei, Shoami, Katsuyoshi and others; important work in cloisonne by the two Namikawam Ando and other well-known art workers; textiles by Kawuhima; embroidery by Nishimura; lacquer by Shirayama, Shosai Akamatsu and others; and iron work by Yamada Chosaburo. There were masterpieces of landscape art, exquisite examples of sculpture in ivory, wood, terra cotta and bronze, showing groups and figures illustrative of scenes in Japanese life; wonderful pieces of modern cast bronzes, hammered metal and the most beautiful specimens of lacquer, hardly to be surpassed by any old works. An indication of the high character of the Japanese exhibit may be had from the fact that out of a total of 712 works offered, the Japanese jury selected only 247 for exhibition. These included besides paintings, choice forms of the finest art productions for which that country is justly celebrated. So important was the collection regarded that before its shipment from Tokyo, a body of three thousand artists visited it at the invitation of their government.

In the works of Antonio Fabres Mexico presented a strong artist. The other artists did not show remarkable artistic advancement but expressed, rather, the result of ambitious effort undisciplined by technical training. Fabres' method and feeling are essentially Spanish and Italian, and his works are admirably drawn and brilliant in color.

Portugal's Royal Amateurs:

Portugal thought it well to be represented at the Louisiana Purchase Exposition by the strongest works of her most representative artists. As a result, a great painter in the person of B. O. Columbano and such distinguished amateurs as His Majesty, King Carlos, and Her Majesty, the Queen of Portugal, exhibited works which attracted much attention both from the casual visitor and the technical expert. There was a certain note of the religious history of the people in this compact collection, but on the other hand a feeling of modernity which showed that the aesthetic sense in Portugal is alive to high artistic influences. The works of Salgado and Bastos and the brothers deMello added to the interest of the collection.

Owing to the political events which distracted Russia's attention from participation in the Louisiana Purchase Exposition, it was left to private enterprise to make the display in the department of Art. Late in July the collection arrived, made up of some 630 exhibits

contributed by ten art societies and art schools. Two galleries had been reserved in the west pavilion, but proved inadequate for a collection of such magnitude; so the chief of the department found additional room in four galleries in the central, or United States, building. The works were installed in such a way as to permit the societies which had gathered the collection to display in separate groups showing their peculiar styles and tendencies. In the galleries assigned in the west pavilion could be seen the more conservative work of the societies to which belong the Russian artists best known to the American public. Among these artists were Repin, Makofsky, Kasatkine, Volkoff, Kosheleff, and von Liebhart, members of the imperial academy of arts. In the galleries in the central building were works of a group of artists introduced to the American public for the first time and distinguished by a vigor and realism which attracted much attention. Had the participation been governmental, the collection would probably have been smaller and selected with more discrimination. Nevertheless, it was as a whole highly interesting in its exposition of Russian scenery, customs and historic events; and it embraced many works of artistic merit. There were a few examples of sculpture, of which Ginsberg's statue of Tolstoy and the exhibits of Sinayoff-Bernstein were of worthy note. In the applied arts division, the collection included a number of characteristic objects of Russian workmanship.

The Swedish section presented practically the strength of artistic endeavor in that country. Zorn, Liljefors, Arborelius, Bergstrom, Larssen, Schultzberg, Kalstenius and the others who contributed to this unique exhibition were represented by a group of works perhaps unequaled among the other sections, in the capacity to convey with pictorial power and beauty the national atmosphere. In the sculpture contributed to this section the same qualities were not so obvious; but there were some examples which won admiration, notably the little bronzes of Carl and Ruth Mmes. The Swedish galleries were treated in a distinctive style, with walls of neutral colors, low in tone browns, slate and broken maroon being freely used. The sculpture was utilized in the picture galleries, with decorative effect.

Appreciation of the Art Exhibit:

As an evidence of the general interest of our people in art the record of attendance of a day in the United States section is worthy of note. The total number of visitors admitted through the exposition gates on November 24, Thanksgiving Day, was 165,000. Of these, 105,000 visited the United States art section. No record was kept of visitors to the foreign sections which must have increased largely the total for the whole department of Art.

Material, as well as artistic, appreciation of the exhibits in the department of Art was shown by the visitors, as is evidenced by the number of works purchased which throughout the department was greater than had been anticipated. There were sold 430 paintings in oil and water color, drawings, etchings and engravings, and examples of sculpture. Of these 260 were the joint sales of Holland, Great Britain, Sweden, France, Japan, Austria, Germany, Italy, Russia and Belgium, and 170 were by American artists. A large number of applied art objects were also disposed of both by the United States section and by foreign countries, including Great Britain, Holland, Sweden, France, Japan, Austria, Italy, Belgium, Hungary, Denmark, Norway and China.

The galleries of the United States sections were open at night, at first during two, later during four evenings, each week. The plan proved to be most popular and particularly afforded very favorable opportunity for the careful inspection of works of art by prospective purchasers, which opportunity as indicated was well employed. The privilege of opening the foreign galleries in the evening was also extended to the various foreign commissioners in charge of art exhibits but was not availed of. The opening of the galleries at night required the introduction of artificial lighting, which was successfully accomplished by a suitable and very effective installation of Nernst lamps, arranged upon a system devised by the department.

In addition to the regular official catalogue of the art exhibits, an illustrated handbook was issued, in which the exhibit and its many features were presented in more prominence and detail. This publication proved very popular and serviceable.

The greatest care was taken to properly guard the priceless exhibits of art placed in the custody of the Exposition and to protect them in every way from injury and molestation. A special organization of detectives in addition to a selected and especially drilled company of the Jefferson guard was constantly employed and in active attendance. This guardian force together with the staff of janitors was also drilled in the matter of fire protection, in connection with the general high pressure water system which enclosed all the art buildings and a special and effective hose system installed in the building. These precautions and those faithfully observed in the construction of the building rendered the great array of exhibits installed practically safe against injury of any nature. Insurance to a figure approximating \$1,000,000, was carried by the Exposition Company on exhibits in the United States section, as a further protection; the exhibits in the foreign sections being also insured by the respective foreign commissioners.

The care observed in the protection of exhibits was extended to their packing, transportation to the Exposition, repacking and return to owners; and was so effective that no injuries of a serious character were sustained.

CHAPTER V

LIBERAL ARTS

Experiments in Applied Science—Musical Marvels—Temperature Research—Liquid Air—Father Himalaya's Solar Apparatus—Sounding Upper Currents—Printing Presses—Advance in Photography—Book Making—instruments of Precision—River and Harbor Works

THE exhibits presented under the general heading of Liberal Arts embraced thirteen groups of the exposition classification and represented important lines of art and industry and of scientific achievement and activity. The progress indicated by the exhibits presented in each of these groups was marked. In printing and typography, the development effected in the last decade was demonstrated by operative exhibits. A complete modern publishing plant was shown at work in the palace of Liberal Arts; also a magazine publishing plant which prepared and printed a monthly magazine; a complete type foundry, and a model printing plant in active operation, showing every process of mezzo-tint and color printing and every form of type setting and casting device now in use. The material advance in the art of bookbinding was also indicated by this truly modern exhibit.

Photography is encroaching upon the more exclusive fine arts. Evidences submitted at the Exposition in the direction of its permanent ambition were convincing. A portrait or a landscape by a modern artist photographer is an achievement worthy of a classification beyond that of mechanical performance.

In addition to the exemplification of present high standards of music offered daily upon the exposition grounds by the bands, organizations and artist assembled from all parts of the world, the mechanical development of the instruments of music was emphasized. The great organ in Festival Hall led the musical marvels of the Exposition and marked the highest accomplishment in the direction of large organ construction. From the mechanical piano player to the singing and band playing phonograph, the other creations extended in astonishing variety. From the examples presented it was possible to trace the steps by which inventors had succeeded in producing the perfected instrument of today from the crude and peculiar objects now relegated to museums and private collections.

In the group of exhibits devoted to medicine and surgery the progress made in medical and surgical science was illustrated. A hospital equipped with every modern appliance was a feature, while adjacent to it was installed a complete chemical laboratory with a comprehensive working display of chemical paints, pharmaceutical preparations, and similar products.

Powerful and delicate lenses of all kinds exemplified the advance in this direction, while the refinement of mechanism effected during recent years was illustrated by the series of exhibits of instruments of precision, computing machines, weighing and computing scales, cash registers, improved typewriters.

The mechanical equipment of the modern theater was shown in detail together with working exhibits of other interesting and intricate mechanical devices and combinations.

The Universal Exposition of 1904 was instrumental in bringing to public notice the contemporary work of men who are devoting their lives in a successful effort to enlarge the field of human knowledge and ameliorate the conditions of human life. Among the many investigation exhibits presented by the Exposition were those in experimental and applied science, including high and low temperature exhibits and demonstrations, and the sounding of the upper air strata, which have attracted the attention of the world. The catalogue and reports of all great industrial expositions show that applied science has held an important place in most of them. An account of the then recent discoveries exhibited at the Paris Exposition of 1855 contains this paragraph:

Beaumont and Mayer are exhibiting an apparatus which consists of a wooden cone covered with hemp and moving with a velocity of 400 revolutions in a minute in a hollow copper cone which is fixed and immersed in the water of a sealed boiler. The surfaces are kept covered with oil. By means of this apparatus 88 gallons of water may be raised from 10 degrees to 160 degrees in a few hours.

Low Temperature Research:

This experiment showing how heat generated by motion may be conserved in water was regarded at the time as very important and becomes pertinent as a means of comparison. In the catalogue of exhibits of Great Britain at the Louisiana Purchase Exposition the British Royal Commissioner stated:

The British royal commission have been fortunate in securing for the St. Louis Exhibition a completely equipped plant similar to that employed by Professor Dewar at the Royal institute at London in low temperature research, in the production of liquid and solid hydrogen. Public exhibitions will be given of the most recent research work carried out by the use of liquid hydrogen illustrating the properties of matter at temperatures approaching the absolute zero.

A separate building was erected for this apparatus and for these demonstrations. It stood near the Press building and was classed under one of the groups in the department of Liberal Arts. The plant was shown in operation Tuesdays and Fridays and was in charge of by Harry Payne, a London engineer. Lectures on liquid air and liquid hydrogen were given by J. E. Peteval, late of Owens College, Manchester, England. These lectures were delivered in the palace of Liberal Arts on Wednesdays and Saturdays. At the close of the Exposition, it was officially announced that this low temperature plant had been bought by the United States government and would be shipped to Washington for reinstallation, to be set up in the bureau of standards and operated by the same scientists who had it in charge at St. Louis. Looking further into the catalogue above cited we find this extraordinary statement:

The more recent achievements of Germany in the field of synthetic carbon chemistry, of which so brilliant an example is furnished by the great color industry of that country, have perhaps not unnaturally led to a widespread popular belief that as regards industrial chemistry generally Germany now occupies the predominant position.

In the light of these preliminary statements, it is easy to see why professors

of physical science and others interested in original research came from foreign countries and distant states to witness the demonstrations and hear the lectures at this exhibit of low temperature installed and operated by the royal commission of Great Britain - a country justly proud of its long line of investigators from Faraday to Ramsey and singularly famous for its application of chemistry to the industrial arts.

In theory there must be a point at which heat is extinguished from the molecule and in consequence the molecule itself ceases to vibrate. This point is called the absolute zero. It has been accurately and scientifically determined but never reached. This point is 460.6 degrees, Fahrenheit, below zero. Some idea may be formed of the difficulty in reaching the absolute zero when it is stated that the lowest temperature thus far recorded in the Arctic regions is 72 degrees below zero and that mercury freezes at 39 degrees below zero. The British low temperature exhibit at the Exposition frequently reached 430 degrees below, thus justifying the language of the royal commissioners when they said: "Public exhibitions will be given in the most recent research in the use of liquid and solid hydrogen illustrating the properties of matter at temperatures approaching the absolute zero." By contrast this experiment shows the advance made since the Paris Exposition of 1855 when the mechanical source of heat was demonstrated by a revolving cone which raised the temperature of water from 10 degrees to 150 degrees-a performance justly hailed at that time as a scientific triumph.

The Dewar Apparatus:

The principle upon which Professor Dewar constructed his apparatus is elemental and well understood. Vapors and gases in a state of expansion release heat and reduce temperature. His successful experiments grew out of the extreme to which he carried this principle and the marvelous precision of the mechanism which he employed. The operation of the plant required a 20-horsepower motor and it was capable of producing three quarts of liquid hydrogen in a few minutes. In the process twenty or thirty quarts of liquid air were produced and used as an intermediate agent. The low temperature required for solidifying hydrogen was attained by three progressive stages and the liquefier was divided into three concentric and corresponding parts. The low temperature of the first stage became the high temperature of the second and the low temperature of the second became the high temperature of the third. Professor Dewar first achieved world-wide renown in 1890 at the Royal institute in London. Step by step the critical temperature has been determined and gas after gas solidified, the element helium alone resisting all efforts to reduce it to a liquid state.

in a brief description it is unnecessary to give more than a mere outline of the mechanical difficulties to be met in a demonstration of this kind. The air pump used is capable of a pressure of 3,000 pounds to the square inch. Manifestly, to construct an instrument of some strength fitted with the minutest precision, places this demonstration in a class by itself. The inner compartments must be protected by thermal insulation from the outer. The heat generated by compression must be conducted outward and delivered into the atmosphere-never inward. The material used must be absolutely pure. Air will not liquefy before it has been dried and cleansed. Hydrogen gas will not liquefy if it contains a particle of air, so that the slightest leak in any of the chambers, coils or compartments under pressure will result in failure.

All are familiar with the employment of low temperature in the preservation of food-products and in the promotion of commerce on both land and sea. But not all are familiar with the fact that a profound knowledge of the subject is opening a wide field to scientific research reaching into the domain of chemistry, physics, and electricity. These principles are also being investigated with a view to prevention and cure of diseases and it is said the possibilities in this direction can hardly be over-estimated. Professor Nipher of Washington University remarks that it may take fifty years to determine the full value of this demonstration.

The Mystery of Heat:

Until recent years the mystery of heat baffled human understanding. A new starting point was disclosed when it was found that a man might freeze his fingers in a boiling liquid, and it is not visionary to now assume that the time is not far distant when this great subject will yield to rational theory and investigation. History tells that Archimedes set fire to the Roman ships before Syracuse by means of reflecting glasses and that Buffon showed the possibility of this by igniting a tarred plank in the same way at a distance of 200 feet. At the Universal Exposition of 1904 Professor Gomez Himalaya, a Portuguese scientist, installed a reflecting apparatus with a series of glasses set at such angles as to reflect the rays of the midday sun upon the same spot. It is claimed that this solar apparatus concentrated a heat approaching 7,000 degrees, Fahrenheit, above zero, a temperature which melts iron, glass, even manganese the most refractory of metals. Asbestos, fire-clay and other forms of fireproofing are said to yield to this tremendous heat. Buffon used 128 mirrors. Himalaya used 6,117 mirrors. The first magnified the heat of the sun's rays on the earth's surface, less absorption, 128 times, while the latter, subject to the same qualification, magnified it 6,117 times. Lord Rose contrived an arrangement of reflecting glasses which developed 3,182 degrees of solar heat; this with the electric furnace stands next to the work of the Portuguese professor.

Like the low-temperature apparatus of the royal commission this solar contrivance was constructed with mathematical precision; but, unlike the delicate, intricate, and at the same time strong devices of Professor Dewar, its purpose was plain and its arrangement simple. It consisted of a steel frame perhaps forty feet high with a maximum width of fifteen feet; in which was a steel cradle curved to the arc of a parabola and in this cradle were set the 6,117 reflecting glasses, each glass three and three-fourth inches wide by four and three-fourth inches long, all focusing their rays in a crucible rendered incombustible by a lining of graphite. In this crucible were placed the materials which it was sought to reduce. The point of focus was controlled by the cradle to which a clockwork indicator was fixed. The first test was made October 18, with entire success. From that date until the close of the Exposition repeated demonstrations were made and always with a greater degree of heat than developed in the electrical furnace.

Himalaya's Pyrheliophor:

Professor Himalaya, who is also a Roman Catholic priest, has taken lectures on physical science at various universities in Europe and now fills a chair in one

of the Portuguese colleges. This is the fourth and largest apparatus which he has constructed for the purpose of focusing the sun's heat; indeed, this apparatus was built in Lisbon and there tested by Captain Brito of the Portuguese artillery before it was brought to St. Louis. That this device has great value as an engine or primal mover especially in latitudes where rains and clouds abound is not claimed. It is insisted, however, that for experimental purposes and for acquisition of data relating to the source of the sun's heat the device has no competitor. Professor Himalaya believes that he has already acquired sufficient knowledge to explode many prevailing theories and feels confident he will be able soon to establish the identity of solar and electrical energy. Professor Himalaya calls his contrivance a Pyrheliophor. The immense series of mirrors was designed to expound certain views of philosophy as well as to demonstrate facts relating to the science of the sun. From the low temperature of Professor Dewar to the high temperature of the Portuguese philosopher is 7,430 degrees, Fahrenheit; the simple statement is sufficient to establish in one form the supremacy of the recent exposition.

Experiments in upper air soundings were conducted by the department of Liberal Arts in the autumn months of the Exposition. Under the direction of A. Lawrence Rotch, director of the Blue Hill observatory, Hyde Park, Massachusetts, Professor H. H. Clayton of the same observatory conducted a series of experiments to explore the upper atmosphere. He liberated a number of balloons specially devised and about five feet in diameter with thermometers, barometers and wind gauges to which automatic registers were affixed. Unable to resist the inside pressure in the high strata of the atmosphere these balloons exploded, and the apparatus made fast to parachutes fell unharmed to the ground. With the parachute was a printed card stating that a small fee awaited the finder upon the return of the apparatus to J. A. Ockerson, chief of the department of Liberal Arts. These experiments were continued into January 1905. In a letter, Mr. Clayton, who is a meteorologist of note, makes the following interesting statements as to their results:

In the January flights temperatures about 90 degrees below zero were recorded on two of three successive days, and on one of these days the temperature was more than 100 degrees below zero at a height of about nine miles. This is probably the lowest temperature ever recorded in the earth's atmosphere. These low temperatures were recorded in the midst of the cold waves of January 25th and 26th, showing that cold wave penetrate to great heights. The speed of the upper current increased very considerably with the advent of winter. Two balloons were carried into Indiana and one into Mississippi. Owing to the intense cold the clock carried by the balloon ceased to run before the end of these flights, so that the time the balloons were in the air could not be ascertained with certainty, but it probably did not exceed two hours and a half in any case and the balloons traveled these great distances in that brief period. Some of the finders discovering the balloon in the early morning could not credit the statement on the attached cards that the balloons had been sent from the exposition grounds in St. Louis the preceding evening and asked for correct data.

Four Thousand Displays:

The exhibits presented in the palace of Liberal Arts were scarcely less interesting than the experiments reported. They included almost four thousand separate displays, all of which were handsomely installed, some in elaborate, many in exquisite settings. The foreign participation in this department generally was

representative. It included splendid collections of exhibits from the following nations: Argentine, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, China, Costa Rica, Cuba, Denmark, Egypt, France, Germany, Great Britain, Guatemala, Haiti, Hungary, Italy, India, Japan, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Peru, Porto Rico, Portugal, Russia, Siam, Spain, Sweden, Switzerland, Venezuela and Honduras. These foreign displays occupied over 200,000 of the 318,700 square feet of exhibit space in the building. Of this, Germany required 60,000 square feet, France 50,000 square feet, Great Britain 35,000, and China 25,000. The exhibit of the latter country was the first it had made at an international exposition.

The exhibits of the United States were extensive and representative and furnished material and opportunity not only for profitable inspection but for comparison in every significant phase of art and industrial and scientific advancement, with the evidences exhibited by the foreign countries. An idea of its extent, variety and superior character may be gathered from the following review by the chief of the department of Liberal Arts, John A. Ockerson:

The palace of Liberal Arts was an imposing structure, rectangular in shape, 525 feet wide and 750 feet long, covering about nine acres. It was located in the main group of exposition palaces in the northeastern section of the exposition grounds. The main front of the building faced the Sunken Garden and the westerly end fronted on the Plaza of Orleans. Exterior loggias ran along these two sides, and the four corners of the building terminated in pavilions with great arched entrances on either aide, which gave a very pleasing and imposing effect. The central entrance on the garden front was in the form of a great hemi-cycle with a vaulted roof embellished with relief figures. A broad band of Pompeian red ran along the blank walls above the large handsomely designed windows and served to bring into bolder relief the beautiful columns of the loggias, particularly at night when the structure was illuminated. The ornamentation of the building was emphasized by a generous use of statuary symbolic of the character of the exhibits which it contained. As a whole the palace was attractive in outline and the verdict of the public was reflected in frequent and favorable comments of the press. The interior arrangement of the building was most satisfactory and effective. Well lighted and ventilated, its broad interior expanse was left clear for the most pleasing arrangement of exhibits, the floor areas being conveniently divided by the four great rows of truss columns, which supported the roof. The walls of the building were plastered up to a height of nineteen feet. Above that the framing, posts, and roof trusses were sprayed with fire-proof paint, of cream color. Ample conveniences for the public were provided in the way of toilet rooms, parcel rooms and drinking fountains. Office and Jury rooms were provided on a balcony in the northwest corner of the building.

Graphic Arts:

The displays of the initiative group of the department of Liberal Arts were especially interesting as many of them were in operation, a number performing regular service. In this important section were to be found the latest and best patterns of printing presses, typesetting and casting machines, a matrix and stereotyping plant, photoengraving appliances, products of lithography, addressing machines, typewriters, printing inks and many other articles pertaining to the art of printing, making in all a most creditable showing for the important industries embraced therein.

A great octuple newspaper perfecting press with a capacity of 96,000 eight-page papers per hour, printed, folded, pasted and counted in lots of fifty, was a principal feature of the domestic section of this exhibit. The weight of this press was about ninety

tons, and a fifty-horsepower motor was required to run it. It was thirty feet long, twelve feet wide and fourteen feet high. Sixty-four stereotype plates each weighing fifty pounds were required to cover the rollers and they were inked from a fountain containing 800 pounds of ink. The paper was delivered from four double width rolls weighing 1,500 pounds each. This press was operated for short intervals each day and was always a source of attraction.

The section also contained an improved two-revolution press with parallel bed movement; a rotary two-revolution press; a complete matrix and stereotype plate making plant; a series of presses of the two-revolution flatbed type with two of four form rollers, which were kept busy on commercial work throughout the exposition season; a four-roller two-revolution press, employed on fine color work; a number of displays of various styles of marvelous type-casting and type-setting machines in operation, than which no other exhibits were more interesting; a two-color sheet feed press which handled sheets 19 by 26 inches at a rate of five thousand per hour, and which was constructed especially for this exhibit, being the first of its kind in operation; several high speed presses with special numbering and perforating devices, printing the body of the sheet in one color, the number in another color and the perforating in parallel or right angle lines as required, all at the same operation; a card and envelope press with a capacity of about twenty thousand impressions per hour; and a display of platen presses, scoring and embossing machines, wood stamping and printing presses, all characterized by exceptional superiority of workmanship coupled with unusual strength in construction.

Printing Presses at Work:

The exhibit also included a remarkable variety of job presses; paper cutters; a job and a newspaper folding machine suitable for smaller establishments; stamping and embossing presses which were kept in operation, one with capacity of about one thousand impressions per hour; folders and feeders which were operated in connection with working presses; printing inks; superb specimens of engraving; a complete equipment for the production of high-grade printing plates, including pen sketches, drawings and photographs and also the prints therefrom as well as etched plates, screens, cameras, etching baths, lighting apparatus and all other adjuncts of a plant, installed for the first time in an exposition building; specimens of lithographing, photo-engraving, steel plate work, book and job printing, embossing and electrotyping; an elaborate display of high-grade posters, installed in a most attractive manner; American lithographic stones from the State of Missouri; addressing machines, with a capacity of 3,000 addresses per hour.

In the typewriter section fourteen different firms were represented. Nearly all of these displayed a commendable desire to make the typewriter section attractive and as a consequence some of the most pleasing installation booths in the building were erected by them. The typewriter display covered all of the latest inventions relating to visible writing, interchangeable type for different languages, book typewriters for use on ledgers and similar books, electric touch, the object generally being to secure the greatest speed with the minimum effort on the part of the operator and also to increase the ordinary range of this most useful machine which has come to be a necessity in every business house of even very modest proportions.

The following foreign countries were represented in Group 15 by specimens of printing and engraving, lithographs and similar work, some of which were of a high order of workmanship: Austria, Belgium, Brazil, Bulgaria, Ceylon, China, exhibiting also specimens of block type; Cuba, Denmark with a photolith edition of the Vellum Flaty book relating to the discovery of America in the year 1000; Italy, a specialty of colored engravings printed on tin and chromotypography; Japan, a full printing plant with Japanese type, also color printing on wood and tin; Mexico, New Zealand, Portugal, chiefly lithographs; Russia, some splendid specimens of helio-engravings and chromo lithographs; Switzerland, Siam,

Germany, France and Great Britain.

The displays of France, Germany and Great Britain were of large proportions and very elaborate. France was represented by more than forty distinct exhibits, the most important being the magnificent display of chalcography of the Louvre installed in the French pavilion. This collection embraced some seventy subjects from forty-four distinguished artists among which appeared such well-known names as Raphael, Rembrandt, Rubens and Titian. Besides this special exhibit there were many splendid examples of commercial work in all lines of typography, lithography in all its variations and also steel and copper plate work, making a splendid showing of high-grade work. No operating exhibit was installed, and the equipment display was confined to a unique four-color press with a vertical bed occupying a minimum amount of floor space; a small card press and ink rollers for use in printing from engraved plates.

Germany was represented by about the same number of exhibitors as France. The display of prints of various kinds covered in an admirable manner all lines of work in graphic arts. One section was particularly attractive in its display of hand press engravings of German national pictures. There was also shown a large line of illuminated initials and titles which were very artistic and pleasing. Etching and multi-color work were both well represented by a large number of subjects. In addition to the samples of work by the different processes there were displays of stereotype matrix equipment, type and small furniture for printers and printing inks.

Great Britain was especially well represented in this group with a fine collection of engravings and prints from the best establishments of England. There were mezzotints printed from a single plate at one operation by inking the plate with rubbers and stamps carrying different colors applied as required; stipple engravings, line engravings and photogravures of high grade were shown in considerable numbers. There was also a fine line of etchings.

Canada was represented in this section by one of the latest inventions in the way of a type-casting machine.

Photography:

Photography was quite fully represented in the line of pictures. The display of equipment was meager, France contributing the greater part of the exhibits in the line of cameras and accessories. There were some 476 distinct and separate exhibits and perhaps ten times that number of subjects, Great Britain contributing a larger number than any other country. Rules governing the selection of domestic photography were published and generally distributed. In order that creditable pictures only should find a place among the domestic exhibits of the photographer's work, the duty of selecting the pictures of merit was assigned to the following experts who were named by the societies mentioned: J. George Nussbaumer, Buffalo, NY, president. Photographer's Association of America; F. Dundas Todd, Chicago, ill, editor, the Photo Beacon, representing the Chicago Society of Amateur Photographers; Curtis Bell, New York, president, Metropolitan Camera Club.

In the domestic section there were only forty-one exhibitors. It may be said that the failure of the photographic fraternity to display the splendid work which many of them execute was very disappointing and resulted in displays not at all comparable with those made by foreign countries. The presence of such exhibitors as J. Craig Annan of Glasgow, Sir Benjamin Stone and others justified our most noted experts in submitting the best their art could produce. Fortunately, there were several small exhibits of the highest order of merit, notably those of J. C. Strauss, St. Louis; Pirie McDonald, New York; Geo. J. Parrot, Fort Wayne, ind.; Knaffi & Bro., Knoxville, Tenn.; Elias Goldensky, Philadelphia; Rudolph Elckemeyer, Jr., New York City; B. B. Dobbs, San Francisco.

In the way of equipment, a fine display of camera lenses and prints resulting from their use and an excellent display of prints and transparencies made by use of dry plates, were

presented in the domestic section.

Great Britain displayed over 240 subjects in the section devoted to pictorial photographs. The leading camera clubs and their most noted photographers were represented, and the collection was exceptionally fine. The display of scientific photographs covering over 250 numbers was remarkably good. There were examples of telephotography, pictures taken at distances of eight and ten miles; pictures relating to solar physics; pictures illustrating the formation and dissipation of the wave caused by a pebble tossed into a pool of water; photographs of flying bullets moving at the rate 2,000 feet per second and bullets passing through a pane of glass; photo-micrographs of geological specimens or steel of various grades and of insects and plants; also a very interesting series of history photographs by Sir Benjamin Stone. The object of this collection is to preserve a permanent pictorial record of current national life, such as costumes, festivals, and public ceremonies, including pictures of historic buildings. One group of photographs served to illustrate the uses of photography in connection with lithography and engraving. A series of some 200 lantern slides completed this very attractive collection only a very brief account of which has been attempted.

Germany had about eighty exhibitors in this group, including photographs by professionals and amateurs, photographic papers and a few exhibits of apparatus of various kinds. There were several exceptionally good examples of pictorial photographs, and the entire collection was of a high order and did great credit to those who were responsible for the display. Along special lines were photographs on wood, cloth and leather; an electric light apparatus with reflectors for use in connection with instantaneous photography for very brief exposures not exceeding $1/30$ of a second, which seemed to meet the requirements of thorough illumination in an admirable manner; and a collection of interesting views relating to the German Colonies in South Africa.

France had several collective exhibits participated in by their best professional and amateur photographers. The high grade of the pictures displayed in this section was established by the awards accorded them. A creditable showing of photographic appliances was also made in the French section consisting of cameras and lenses, enlarging apparatus and special appliances for photo-astronomical work. The display further contained dry plates, films and appliances used in developing and fixing negatives.

Switzerland was represented by a huge photo enlargement of Alpine scenery measuring seven feet high by seventy-two feet long, said to be the largest photograph ever made.

Brazil and Mexico took the lead of the remaining foreign countries in point of number of photographs exhibited and both presented some very good work.

Nearly all of the foreign countries displayed photographs, the subjects generally being landscapes or special features relating to buildings, native people and their costume.

Books and Publications:

The participation in the exhibit of books was quite extensive, especially in the foreign sections. The German display was made under the auspices of the "German Book Trade Union" which organization had charge of similar exhibits at the Columbian Exposition and at the Paris Exposition of 1900. As Germany has 6,303 book printing and 12,860 binding establishments employing together 130,713 persons, it was to be expected that her display in this section would be both extensive and attractive. These expectations were fully realized. Some forty-nine leading firms combined in a collective exhibit including artistic volumes, book covers, picture books, juvenile books, and job work, showing clearly the capabilities of their modern book trade. Individual exhibitors also made a good showing in the same lines.

In the British section there were 462 volumes of general literature; 124 volumes pertaining to scientific subjects; a large collection of bibles translated into various foreign tongues published by the British and Foreign Bible Society; some forty bibles and prayer

books of different styles, products of the Oxford University Press; seventy odd volumes with highly finished artistic bindings; and a collection of Kelly's directories. Among the bindings displayed were elegant examples of the binders' art in the sixteenth century and down to the present time. This collection of bindings throughout was exquisite and compared favorably with, if indeed it did not excel, any exhibit of the kind ever made.

France was also represented in this group, having 124 different exhibitors each displaying a number of examples of high-grade work. The section devoted to this exhibit was admirably arranged for the display of books as well as for the convenience and comfort of visitors. Tables and chairs were provided where those interested could examine the volumes at their leisure, an attendant being always present to explain the exhibit and describe the merits of the different classes of work displayed.

The report of the jury upon the exhibit of Germany, Great Britain and France in this section was very complimentary indeed.

The Argentine exhibit embraced a considerable number of bound volumes of newspapers, periodicals and books of various kinds largely descriptive of the natural resources of that country.

Mexico and Brazil also presented quite extensive exhibits, and many other countries contributed examples of their work in book printing and binding.

Fine Bindings:

In the domestic section this group was not as generally represented as had been anticipated, the list of exhibitors being rather a short one; there were only thirty-five exhibits. In the one of fine bindings and illuminated text a prominent New York firm easily took the lead in their installation and in the artistic character of the work displayed. One of the editions displayed was illustrated with 300 original paintings done on parchment. There were some 2,000 specially designed initial letters, title pages and head and tail pieces. The examples of sumptuously bound volumes attracted a great deal of attention from visitors in general as well as from experts in that line of work and the comments were highly complementary to the exhibitors. A Chicago firm also had a magnificent display of fine bindings and sumptuous volumes. Among these were a "Life of Napoleon" in twelve volumes, bound in dark green crushed velvet, beautifully tooled and inlaid with various colored leather. The inside cover panels were of different colors for each volume. Each leaf of letterpress as well as the plates were inlaid in Whatman paper. There were besides these quite a number of volumes of current literature in most elegant dress. A number of publishing houses showed creditable lines of books and magazines including methods of publication and illustration. The chief appliances used in binding, such as wire stitching machines, were shown in full variety and in operation. A monthly magazine with headquarters in Boston contributed quite as much as any exhibitor toward making the graphic arts section interesting and attractive by conducting a process exhibit showing how magazines are prepared and printed.

Maps and Apparatus:

The displays in the domestic section of this group though limited in number were excellent in quality. One of these installed by a well-known map publishing house was possibly the most extensive exhibit of maps and similar publications and paraphernalia ever made. Maps and globes of huge dimensions and also those of minute proportions were shown in this exhibit, which was installed in most attractive manner. An interesting display of old maps relating to the Louisiana Purchase was made by the State of Louisiana. There were some 200 of these maps, the dates covering the period from 1528 down to the present time. The exhibit included also a large relief map showing the levee system along the Mississippi river in Louisiana, a relief map of the City of New Orleans in 1803 and another

showing the city in 1903.

The most instructive display of maps must be credited to Great Britain with its extensive exhibit of different surveys and explorations. The exhibit included the ordinance surveys maps of England, Ireland, and Scotland; the British office maps relating chiefly to surveys made in Asia and Africa; the Royal Geographical Society's maps of various districts in all countries of the world; and maps of the survey of India and the Palestine explorations. Besides the above there were several firms of map publishers represented.

France had a small display of maps, globes and atlases, the most important of which was a series of maps of Madagascar.

Germany was represented by thirty-two exhibitors who displayed various kinds of maps, globes and atlases, the greater portion of which were installed in the palace of Education. The work of the German draftsmen is well known for the excellent execution of detail in map work and the display made sustained their enviable reputation. Many other foreign countries exhibited maps, not as examples of the publishers' art, but mainly to show the natural features of the respective countries treated. Chief among these were Mexico and Brazil.

Instruments of Precision:

Germany must be credited with the best display of scientific instruments which has ever been assembled at an exposition. It embraced astronomical and geodetic instruments; balances, apparatus for the exact measurement of length; optical instruments; also, electrical apparatus not pertaining to this department. This display was installed in the palace of Education, covered an area of something over 5,000 square feet and embraced over sixty exhibitors, among them some of the best instrument makers of Germany. The most important astronomical instruments shown were on meridian circles with twenty-five-inch limb, the graduations being read by four micrometer microscopes to tenths of seconds. The telescope had a focal length of 3.75 feet with a clear aperture of 3.2 inches. It had an achromatic aplanatic eyepiece magnifying 114 diameters. The cross hairs were illuminated in the usual way. Vertical and horizontal adjustments were provided for the bearings and a reversal carriage was also provided. The "stereo comparator" is a new device for measurements of various kinds in geodesy and astronomy. In this instrument the stereoscopic method of observation is made use of to determine the distribution in space of distant objects, to measure the size of same or compare their difference in size. It is especially applicable to a large series of problems such as the ready comparison of graduations, the measurement of the height of clouds and similar matters. An extremely sensitive seismograph was shown by means of which earth movements are registered with a stylus on smoked paper, the vibrations being magnified 200 times. In the class of optical instruments was a general line of the latest photometric, stereoscopic and spectrum apparatus, including a three-color projecting machine which successfully throws upon the screen a picture in the natural colors of the object represented.

France had twelve exhibitors in this group, the display including geodetic and surveying instruments and a good line of scientific apparatus for various uses. Their display of lenses and prismatic apparatus was especially good. A collection of coins and medals relating to several different periods was shown. The bureau of art of Paris displayed a collection of medals and dies of exceptionally high order and merit. The best display of opera glasses, binoculars and telescopes was installed in the French section. Cinematograph apparatus, stereopticons and similar apparatus were well represented.

Great Britain brought exhibits from some of its leading instrument makers, including an electrically driven equatorial telescope, mining and general surveying instruments. In the display were eight theodolites of various sizes and with different attachments. The largest of these had an eight-inch limb and was provided with micrometer microscopes for reading the graduation. Scales and drawing instruments were also well represented.

The “constant deviation spectroscope” and the “compound direct vision solar prominence grating spectroscope” represent the latest improvements in this useful instrument. A line of wide aperture binoculars and field glasses giving a high degree of illumination, depth of focus and definition was shown in this section. An exhibit of more than ordinary interest was made by the royal mint which displayed a full line of coins and medals covering the different epochs of English history. The royal mint also strikes the medals required for the army and navy, the royal society, educational institutions, and private corporations. The exhibit of medals covered a complete line of all varieties of medals issued to the army and navy from 1816 down to 1902, and a set of coronation medals dating back as far as Edward VI in 1546. There were also facsimiles of the great seals of England and the various official seals of Great Britain and the colonies; all making a unique display of great interest and historical value.

China's Coins:

China contributed to this group an interesting collection of coins of great antiquity, reaching back as far as 2250 B. C. The collection comprised Chinese, Armanese, Japanese and Korean coins and charms, about 3,000 in number. It is said that the coinage of every dynasty and even of ephemeral rebel rulers was represented. China also presented an interesting exhibit of its weights and measures. Various systems of measurement of dimensions and capacity was included in this extraordinary series. The Chinese display in this group also contained a few instruments such as compasses and sun dials. One of the former, called a geomantic compass is used in selecting suitable sites for dwelling houses and for burial places. Just how it is manipulated for such purposes was not apparent.

In addition to the countries described above Belgium, Brazil, Ceylon, Italy, Japan, Mexico, Netherlands, Russia and Siam each made small contributions to this group, principally in the way of native coins, weights or measures.

In the domestic section there were some excellent exhibits of scientific instruments in the line of surveying and astronomy, including a fine equatorial telescope with the latest mountings; a theodolite with a twelve-inch limb, reading with three micrometers to single seconds; a range finder for use in sea coast defense work by means of which distances to an approaching vessel can be readily and accurately read; a series of fine lenses of unusual size; engineers and surveyors' instruments and appliances of all kinds; instruments for use of the surveyor and draftsman, and a line of philosophical apparatus for educational purposes. An excellent display of various patterns of scales was on view from railroad to counter style and size. There were three exhibitors of computing scales such as are used mainly by grocers and similar trade. They are comparatively new and provide in a very ingenious way for determining mechanically the weight to be given for a certain sum at a given price per pound. For instance, an article sells for seven cents per pound and a customer wants twenty cents worth. The pointer is readily set at the mark required on the scale and it only remains to fill the scale pan until the beam balances and the correct weight is assured without any mental calculation.

The computing machines under different names formed another interesting group of recent inventions. The remarkable growth of the factories producing these machines is sufficient evidence of their value to the business world. This section contained an extensive display of cash registers supplemented by a lecture room where the mechanism of the device and its utility were fully explained. These registers are now made to cover the different systems of coinage of various countries. An electrically driven machine for wrapping and counting coins was shown; the coins were placed in a hopper and the device set in motion. When the required number or coins came together, they were tightly wrapped and dropped into a receptacle below, the operation being performed with great rapidity and unflinching accuracy. A display of binoculars and telescopes and of examples of work done with camera lenses completed the domestic section.

Medicine and Surgery:

In this group the domestic section was well filled with medical and surgical appliances as well as hospital furniture and fixtures, showing the most approved apparatus in use at the present time. The influence of the modern demand for massage was shown in the great number of mechanical vibrating machines which were displayed. The latest of these is applied to the eyes for the purpose of restoring failing sight. The theory is to bring the eye back to its original form by means of a rapid vibratory movement while the eyeball is enclosed in a partial vacuum. The efficacy of this device remains to be established.

Remarkable progress has been made in inventions of many new and important surgical instruments and to these should be largely credited the progress that has been made in surgery itself. Intricate operations require not only great skill at the hands of the surgeon, but instruments fashioned with great ingenuity and mechanical skill.

The X-ray machine though of very recent origin, as far as practical use is concerned has become a necessity in the hospital and in the office of the modern surgeon. A fine display of these and other intricate electrical adjuncts of a well-equipped hospital was made in the section devoted to this purpose.

Nebulizers and like devices for treating diseases of the respiratory organs were shown in several forms as were also devices for the application of disinfectants which, in the present-day practice, are regarded as essential features in the mitigation of disease. Much attention was given to the display of anti-toxins, methods of production and their application. By means of anatomical models the results of treatment were vividly portrayed.

A very full line of hospital furniture and other equipment was displayed. Cabinets, chairs, lathes, compressors, and other paraphernalia of physicians' and dentists' offices were also in evidence. In the line of artificial limbs, the inventor has shown great ingenuity in imitating nature so closely that a lost limb can be replaced with one, though not of flesh and blood, that adds much to the comfort of those who have the misfortune to be maimed.

The surgical appliances in the Chinese section showed no little ingenuity, despite the fact that the instruments seemed very crude as compared to the highly polished, keen-edged tools of our surgeons.

France presented a fine display of surgical instruments. There was also an interesting display of cases of instruments and medicines for military or other expeditions. The Paris dental school was represented by an exhibit of dental tools and apparatus.

Germany made a very large and complete display of anatomical and other models showing the effect and progress of many diseases of mankind and the results of specific treatment for the cure of same. These were supplemented by photographs and drawings along the same lines. Numerous X-ray pictures added interest to the collection. Its display of surgical instruments and apparatus was rather meager. There were few exhibits of hospital furnishings and fixtures, disinfecting appliances and laboratory apparatus. An important and interesting exhibit was that of instruments for malaria expeditions and the examination of mosquitoes. Equipment and instruments for bacteriological investigations, ray apparatus for demonstration purposes and a well-equipped lecture room completed this most instructive display.

The Great Organ:

In this group 168 exhibitors were represented, embracing twenty-two different countries, showing all classes of musical instruments. The new inventions pertained rather to parts of instruments as no instrument radically different from those that have been familiar for many years has been discovered. The greatest development has doubtless been in the line of self-playing devices for pianos and organs, many types of which are on the market. The perfection of the perforated music roll has also served to stimulate invention of new

forms of music boxes. The exhibits in the United States section included elaborate exhibits of pianos and organs, piano players, band and orchestra instruments, phonographs in use and in parts, showing perfection of detail and most exquisite design and finish. A display of more than ordinary interest was a curved piano lid that acts as a sounding board reflecting the sound waves in parallel lines toward the audience, thus materially increasing the volume. The most important exhibit in the section was the colossal organ installed in Festival Hall - the largest ever successfully operated. The dimensions of this organ were as follows: 63 feet long, 30 feet deep, 50 feet high. It had 5 manuals, 140 speaking stops, 239 movements, 10,059 pipes ranging from $\frac{1}{2}$ inch to $37\frac{1}{2}$ feet in length. The largest metal pipe weighed 840 pounds and was 17 inches in diameter. The largest wood pipe measured $23\frac{1}{2}$ by 28 inches inside and weighed 1,735 pounds. It had a set of 20 tubular chimes. The combination switchboard had 1,616 electric switches capable of producing 17,179,869,183 distinct tonal combinations. The organ contained 130 miles of electric wires, 1,300 magnets and 4 motors aggregating $23\frac{1}{4}$ horsepower; it filled 12 large furniture cars and weighed 250,000 pounds. In order to emphasize the dimensions of this organ, the following list of the six most notable organs of the world is given: Sydney, N. S. W., Town Hall, 5 manuals, 128 stops; Riga, Russia, Cathedral, 4 manuals, 124 stops; Garden City, L. I., 4 manuals, 115 stops; London, Albert Hall, 4 manuals, 111 stops; Leeds, Town Hall, 4 manuals, 110 stops; Chicago Auditorium, 4 manuals, 109 stops.

Germany was represented by some of the best exhibits of pianos and other instruments known to the musical world. The exhibit consisted of pianos, organs, violins, flutes and harmonicas. The organ operated by an automatic player installed in the palace of Liberal Arts was a most satisfactory instrument as were also the splendid pianos installed in the Varied industries building. The list of exhibitors was not a long one, but the display was highly satisfactory in point of excellence. In 1902 Germany had 1,071 factories employing 24,930 hands engaged in the manufacture of musical instruments and this class of work is increasing at a rapid rate. The practical application of the hammer mechanism was first made in Germany and piano making developed gradually until in 1903 there were 465 piano factories in operation. More than half of the product of these factories, or nearly \$7,000,000 worth, was exported to England, Australia, Russia and other countries. Germany has 275 factories for the manufacture of church organs in which she is also proficient.

Foreign Musical instruments:

France was also well represented in this group, having a larger number of exhibits than any other country. The display of pianos, organs and brass instruments was quite complete. Flutes and like instruments were also exhibited as well as a choice collection of violins and other stringed instruments. An unusual instrument was a double grand piano with two keyboards. A large orchestration in this section was frequently played with pleasing effect. Some of the highest-grade pianos made were to be found in the French section.

In the British section the display in this group was confined to band instruments, chiefly of brass, some of the best-known makers being represented. So, while the exhibit was limited in extent and variety, it made up in quality what it lacked in quantity.

Italy made a small display of high-grade violins and other stringed instruments for which that country is famous. The display also included drums and cymbals and musical scores.

Japan has taken up the manufacture of pianos and displayed one instrument which was pronounced to be of very good quality in the workmanship as well as in tonal effect and action movement.

Austria, Brazil, Mexico and Portugal each had a small display in this group. Some of the far away countries like Egypt, Ceylon and Siam displayed interesting collections of native instruments. In this respect the display made in the Chinese section was the most

complete and interesting. It included rare specimens such as these: two-stringed violin called "erh-hsien," the most popular instrument met with in China, the body of a hollow bamboo tube and coconut shell; the "yang-ch'in" or "foreign harpsichord"- in the form of a rectangular trapezoidal or oval box, having a range of fine metallic wires disposed in sets of two, three or four to each note, decreasing in length from the base upward; seven-stringed lute, called "ch'in"- one of the most ancient instruments used for what is called elegant music and supposed to be used especially by the educated classes; a four-stringed violin, called "hu-ch'in,"- of hollow cylindrical body the upper end of which is covered with snake skin, while the lower is left open; a balloon guitar, called "pl-p'a, of four silk strings which are said to represent the four seasons; three-stringed guitar, called "san-hsien," - of shallow cylindrical body the top and bottom of which are covered with snake skin; a long neck and three strings, sometimes played with the finger, but oftener with the plectrum; and a unique mouth organ, called "eheng." The last mentioned is an instrument intended to symbolize the phoenix; the body or wind chest is made of gourd, or wood, and in its upper part tubes of the different lengths are inserted and so arranged as to resemble the tail of a bird, the middle tubes being the longest.

Oriental Harmony:

Other remarkable items were: a tambourine, called "pa-chio-ku," octagonal in shape, used by ballad singers to accompany their songs; a lute, called "ee," originally said to have had fifty strings but as now in use has twenty-five, each elevated on a movable bridge; the Chinese ocarina, called "hsuan;" a reddish-yellow cone of baked clay or porcelain ornamented with designs of dragons and clouds and pierced with six holes, one at the apex to blow through, three in front and two behind; and the "pai-heiao" or pandean pipes, of sixteen tubes, arranged upon a frame more or less carved and ornamented, giving the same notes as the bell and stone chime. The sounds of this last instrument, which is used only in ritual music, represent the voice of the phoenix, and the form of the frame typifies this bird with its wings spread.

A rare collection of Chinese flutes included the "hsiao" said to have been invented during the Han dynasty-a tube of dark bamboo about 1 foot 8 inches in length with five holes above, one below and one at the end, through which it is played; the "tl-tzu," the flute ordinarily seen in China-a tube bound round with waxed silk and sometimes ornamented with tassels, having eight holes, one to blow through, one covered with a thin reedy membrane and six to be played upon by the fingers; the "hao-t'ung," a long cylindrical instrument having a sliding tube which can be drawn out when wanted for use, not unlike a telescope but of much larger diameter; and, the "eo-na," known to foreigners as the "Chinese clarinet"-the most shrieking instrument used in China, yet none is in more general use; when heard in the morning its sounds unmistakably announce a funeral cortege; in the afternoon a nuptial procession; it consists of a wooden pipe fitted with a copper bell, has seven holes on the upper side and one on the lower for the thumb; the mouthpiece is a small reed affixed to the upper end.

An interesting collection of gongs was presented. These were cast in the shape of a Chinese straw hat with a large brim and were of various sizes from 2 inches to 2 feet in diameter. Suspended by strings they were sounded by being struck with mallets. The use of gongs is very general in China.

The Chinese musical collection further included examples of hand bells used by Buddhist and Taoist priests; drums of peculiar, crude and elaborate forms and finish; castanets, called "shou-pan"-three small slabs of wood attached together with silk cord; cymbals, called "po," on exactly the same principle as our cymbals, most conspicuous at theatrical performances; and a collection of sonorous stones made of jade or black calcareous stone employed only at religious and court ceremonies.

The displays of theatrical appliances were limited, there being only sixteen exhibits in

all. The most important of these were asbestos and metallic curtains and special appliances for the prevention and extinguishing of fires. China displayed a fine model of a native theater and Slam had an interesting collection of native theatrical costumes. Masks, theatrical ornamental and jewelry were also entered in this group.

Chemical Arts:

The United States was represented in this group by numerous and excellent exhibit embracing chemicals, pharmaceuticals, perfumes, soaps, paints, varnishes, matches and pyrotechnics. One of these exhibits which included some 500 specimens covering a wide range in the field of chemistry was undoubtedly and from all points of view the finest display of chemicals ever made at any exposition.

Other interesting exhibits were a rare line of chemical specialties installed in a booth representing an old-time alchemist's shop; an attractive display of antiseptic preparations; a number of elaborate collections of pharmaceutical preparations; richly installed chemical machinery; perfumes and toilet articles; a novel display consisting of a soap bubble fountain which never failed to attract attention. The exhibit further included a cottage constructed of soap and lye packages; a display of soap powders and cleaning preparations; extensive exhibits in the line of paints and related material; a tower fifteen feet square at the base and about forty feet high, constructed of match boxes and embellished with imitation matches of larger; a display of rockets, bombs and general pyrotechnics; collections of electro-chemical products such as carborundum, peroxide of sodium, caustic soda; and other materials.

Bulgaria practically furnishes the world's supply of attar of roses, the quantity produced in 1900 reaching 11,000 pounds. The main rose producing section of this country lies between two spurs of the Balkan range and covers a strip about twenty-five miles wide by eighty miles long. Elaborate and interesting exhibit of this highly valued perfume were presented.

Brazil had some 150 exhibitors in this group, the exhibits consisting largely of small samples of pharmaceutical preparations, soaps and perfumes.

China presented a very long list of items exceeding a thousand in number. These related largely to remedies concocted from roots and herbs not a few of which may be found in our own "materia medica." A good display of Chinese colors and varnishes was shown, also a complete exhibit of the famous Chinese inks.

France was well represented in this group, particularly in the line of perfumes and pharmaceutical products. In these lines her best products were liberally displayed in the 152 exhibits presented to the inspection of visitors. A collective exhibit by "La Societe Chimique de Paris" was particularly attractive on account of the great range of its preparations. This collective exhibit embraced seventy-one participants covering nearly all fields of chemical research. Individual exhibitors, including the best-known firms of France also made attractive displays of chemicals and pharmaceuticals. Among these were medicine chests filled with remedies for use at sea or at points remote from the physician and apothecary. Elaborate displays of perfumes and the raw materials pertaining to its manufacture, of toilet preparations and soaps, of glues and gelatins were installed in the French chemical section. There were also exhibits of laboratory apparatus and models of plants for the manufacture of perfume, as well as apparatus for industrial chemical works. Printing ink, colors and varnishes, threads and fabrics of artificial stones rounded out this interesting display.

One of Germany's Great Industries:

German participants in this group numbered two hundred but the individuality of the exhibitors was in a great measure eliminated by the character of the display which was mainly in the form of an educational exhibit intended to show a sample of each and every

chemical produced in that country. This was supplemented by displays of laboratory apparatus, machinery used in industrial chemistry, a fine model of Liebig's laboratory and a model of an alchemist's laboratory of the fifteenth century, the whole located in the palaces of Education and Electricity on account of lack of space in Liberal Arts palace and occupying a total space of over 15,000 square feet. Among the laboratory apparatus displayed were appliances for determining the density of vapors, the analysis of gases, for distillation in vacuo, spectrophotometer, apparatus for inspection of food products and other interesting appliances used by the chemist. Considerable attention was given to anti-toxins and curative serums while pharmaceutical preparations were limited in number. The display of soaps, perfumes and articles for the toilet was quite satisfactory. Of recent years the German chemist has directed his efforts toward the production of food stuffs but up to the present time has met with little success. The chemical industries in Germany have reached great proportions and are still developing very rapidly. In 1902 there were 7,539 establishments employing 160,841 workmen. The value of the output in 1897 was \$227,496,617 and is said to be much greater at this time. Over one-third of the product was exported and found ready market in other countries. The above figures show the economic importance of the chemical industry in Germany and this importance was fully recognized in the great exhibit that was prepared and the prominence of its installation.

Great Britain has kept well to the front in the development of the chemical industries as was manifested by its splendid exhibits in this group. No country has been more active in the field of chemical research than has Great Britain, and the efforts of her scientists have been rewarded with some of the most important discoveries of the age. The exhibits in this group easily led all others both in methods of installation and in the character of the exhibits themselves. One cage contained a very complete line of coal tar products which was full of interest to the expert as well as amazing to the layman who realized for the first time the many different uses to which this product could be put. Specialties for the treatment of fermented and unfermented beverages, essences, essential oils, ammonia-soda products, drugs and pharmaceutical preparations all of these were quite fully represented. Then there was a long list of rare substances produced or discovered in the research laboratories. There was apparatus for the laboratory and for industrial chemistry; dye stuffs, bleaching powders, soaps, candles and perfumes; wares, glues and disinfectants. The antiquities of pharmacy embracing mortars and pestles and other articles made an interesting exhibit as did also a model showing methods and appliances used in connection with the oil industry in Burma. The tabloid system of medication and its special uses in the field hospitals were fully exploited. The exhibit of Great Britain as a whole in this group was a model for displays of this kind and deserved the highest commendation.

Italy, Mexico, and Japan, each had an important line of exhibits in this group. Italy's was conspicuous for its sulphur, alcohol and oils; Japan's, chiefly for its lacquer and fireworks; Mexico's, for its medicinal compounds.

Many other foreign countries were also represented, each with a few exhibits.

Sweden was represented by a neat display of the well-known Jonkoping matches.

Paper from Cornstalks:

The great paper-making industry of the United States was very meagerly represented in the paper group. In fact, no general display of paper was made and the exhibits in this line were confined to a few specialties such as book and cover papers, corrugated paper and building paper. As a result of this indifference on the part of domestic manufacturers of paper and machinery the display was by no means creditable to this great country. One exhibit of paper in the domestic section, however, although limited in extent, is worthy of special mention. It showed the results of experiments in progress looking to the use of cornstalks and the refuse of sugar cane in the manufacture of paper. Although yet in the experimental stage there is good promise of ultimate success in the economical use of the

material named. Success in this line will mean not only a material increase in the value of the crops but will annually replenish the stock required by the paper mills which are rapidly stripping the forests in their search for material to supply their demands; the discovery therefore seems to be of very great importance. There were a few exhibits of wood pulp and other material used in the manufacture of paper. Three exhibits of limited extent covered all of the paper-making machinery displayed. One of these was a welded-steel soda pulp digester of 9-foot internal diameter and 43 feet long.

Japan's exhibit of paper far exceeded that of any other country both in quality and quantity. There was a large variety of such paper as bond, ledger, vellum, drawing, wrapping, copying, letter tissue and book papers. There were also paper fabrics of various kinds. Fifty-three exhibitors were represented in this very complete display of the paper industry of Japan.

China had a large number of samples of paper of great variety; among them were high grade drawing paper, transparent hemp fibre paper used instead of glass for windows, letter paper, printing paper, pith paper used especially for making artificial flowers, heavy packing papers and a great variety of colored papers. A crude model illustrated the method of paper making.

France had seventeen exhibits of paper, displaying chiefly cigarette, packing, drawing, and wrapping papers. There were also shown samples of wood in several stages of preparation for papermaking. Brazil presented a fine display of cardboard and wallpaper. Germany exhibited paper plates and napkins, hand-made papers and minor devices for the manufacture of paper and cellulose. Belgium was represented in this group by five exhibitors with limited displays. Other countries represented were Cuba, Italy, Mexico Portugal and Siam.

In the domestic section many exhibits of engineering, civil, military and architectural models, plans and designs for public works were installed under these groups. The American Society of Civil Engineers occupied a prominent position near the center of the building where an artistic booth was erected and used during the exposition season as headquarters for visiting engineers. A secretary and stenographer were also at hand to extend a welcome and answer questions; a resting place and reading room was available for visitors. The booth was provided with telephone and writing material. Within was installed a full edition of the transactions of the society and the walls were covered with drawings and photographs illustrating the work of several members who had made these contributions as exhibits. Two of the material exhibits were of unusual interest as they bore directly on the preservation of timber under entirely dissimilar conditions. One consisted of samples of timber taken from cliff dwellings in the arid regions of Arizona which were doubtless very old and had been free from moisture a great many years; and the other was piling taken from the lake dwellings of Switzerland that had been submerged in water at least 3,000 years; both of these were in a good state of preservation.

The Age of Concrete:

Perhaps the most important development in structural material that has occurred in recent years is in the use of concrete reinforced with metal bars embedded therein and hollow concrete building blocks. In both of these lines development has been very rapid and the uses to which these materials are put are increasing day by day. Inventions of machines for the economical and rapid manufacture of building blocks are of almost daily occurrence and new types of corrugated bars for use in reinforcing concrete are developing as new uses are found for this material. One exhibit showed how this material could be used in the construction of spiral stairways or stairways with landings, all without the usual support heretofore deemed essential. Several exhibitors displayed hollow block machines. This development serves to increase the demand for cement and new plants are being installed in many places where the proper materials are available, and the transportation facilities are

satisfactory. The exhibitors of cement were therefore numerous and came from all parts of the country. Stone-crushing machinery and concrete mixers also showed by their increasing numbers and patterns the growing tendency toward the use of cement in construction of various kinds. Concrete pavements have practically superseded natural stone for sidewalk pavements and concrete is rapidly coming into use for curbing, while a street pavement is not up to standard, unless it has a heavy foundation or sub-base of concrete. It has recently been shown that armored concrete can be used to advantage in the construction of water tanks and tall chimneys, while in modern fire-proof floor construction in buildings it is indispensable. A building of cement was erected for the purpose of demonstrating the adaptability of such material to this kind of construction. Installed within the building was a complete testing laboratory for use in testing cement with all of the appliances used for such work.

A branch of work that is now attracting considerable attention in all parts of the country is that of improving public roads. The manufacturers are keeping well abreast of the demands for machinery of various kinds needed in this work, a fine line of which was displayed in the palace of Liberal Arts. The steam roller is almost indispensable in good road building. Scrapers, grading machines which deliver the plowed-up material into the dump cart as it moves along without the necessity of other handling, machinery for crushing the rock required for top dressing, all operating with a minimum amount of hand labor, make the building of roads both economical and rapid as compared with the methods of a few years ago. For the care of finished, paved streets of cities are sprinklers, flushing tanks on wheels, sweepers, surface scrapers and snowplows. All of these appliances were entered as exhibits. It is not too much to say that no better display in these lines was ever made. The completeness showed that the age of good roads in this country is rapidly approaching and that there is a growing appreciation of their importance and value.

In the very center of the building, in the space occupied by the American Society of Civil Engineers, stood an accurate model on one-fourth scale of the lighthouse which guides the mariner to the mouth of the Southwest Pass of the Mississippi river.

An elaborate collective gas exhibit occupied an adjacent block. This exhibit consisted of machines and models relating to the manufacture, distribution and use of gas. It was the first display of the kind that had ever been made of the gas industry and that it was entered into with purpose was shown by the fact that there were sixty-seven participants in the exhibit and the demands far exceeded the space available.

Public Works illustrated:

The public works of this country were quite fully illustrated by a series of exhibits in the Government building which were alike creditable to the government and to the officials who were immediately responsible for their installation.

Not many years ago the bridging of a river was regarded as a wonderful piece of engineering work. The Forth bridge was remarkable for its great length of span and no other structure in the world came anywhere near equaling it in this respect. In the engineering section a model of the new Quebec bridge marked a new limit of extreme length of span. The central span of this bridge is 1,800 feet long, or 90 feet longer than the great span of the Forth bridge. It has two anchor spans of 500 feet each and two approach spans 210 feet each, a total length of 3,220 feet. It has a width of 80 feet between centers of outside railings and carries two railway tracks, two lines of trolley tracks, two highways and two sidewalks. The clear height above the water is 160 feet and the material required in construction weighed 35,000 tons.

There was also presented a splendid model of the Memphis bridge which is a well-known structure. The later types of rolling lift bridges were shown by means of drawings and photographs; also, steel construction as applied to bridges and building.

Two fine models of hydraulic dredges of the newest type showing in detail the methods

of operation and the disposal of the dredged material were presented. There were also displayed models of a steel floating dry dock, of curved break waters for improving entrances of tidal harbors, and of the works pertaining to the Chicago sanitary and ship canal.

The New York Tunnels:

The great engineering work going on in and about New York City was also well represented. This series of exhibits included an elaborate model, supplemented by photographs, of the subway and tunnel work; plans and drawings of the great subway; models, plans and drawings of the works of the department of docks and ferries and the department of bridges. Models of terminal stations at New York and Washington were also exhibited. A good display of filters for various purposes, mainly for treating large water supplies, and a series of welded steel gas buoys and beacons also found a place among the exhibits of the newer devices.

Argentine presented several models of harbors, a model of a dry dock and of an irrigation dam, all of which were very well executed and instructive. Austria displayed a fine line of models including bridges of various types, canals, locks, needle and other kinds of movable weirs, structures used in the regulation of the Danube and other rivers, all forming a most interesting and valuable collection. A model of the Columbo breakwater was shown in the Ceylon display. China showed models of native bridges and dredging boats and various typical native houses, both public and private, temples and dwellings. Denmark exhibited a model of Copenhagen harbor and Egypt made quite an elaborate display of the irrigation works of the Nile, both the old native methods and the modern achievements of the engineer.

in the French section space was devoted to the publications and works of the Society of civil engineers of France. That body also displayed an elaborate series of drawings and photographs relating to public works of many kinds, and a few small models of construction equipment for heavy sea wall work. The most important exhibit was that relating to lighthouses and search lights. Two immense lenses of the first order were mounted complete with their lamps and revolving machinery. In order to avoid the rusting incident to salt water, which increases the friction of the moving parts, these lenses with their lamps are floated in barrels of mercury and the power required to revolve them is by this means reduced to a minimum. Very powerful search lights with the appliances for moving them were also included in this splendid exhibit of France.

The British section contained a representative line of models of dredges, light ships, light houses, bridges, tunnels and a particularly fine model of the great Assouan dam. The models of the various light house structures built at different times at Eddystone rock near the coast of England were quite interesting. A relic consisting of the tallow dip candles used in the earlier days formed a strong contrast to the modern light shown in the neighboring French section. There were also various models, plans and photographs of docks, harbors, sea walls and a number of other engineering structures.

Models of Harbors:

Germany was represented by the elaborate exhibit of the royal Prussian ministry of public works which included great models of harbors, docks, piers, ice breakers, dredges, tide gauges, light houses, and bridges. This display included the most important works at present under construction and such as have been completed within the past ten years. There was also an interesting series of models showing how the sand dunes are treated to prevent the drifting of sand and to secure thereon a growth of vegetation. A working model of the Dortmund-Ems ship lift near Heinrichsburg gave a good conception of this unique method of lifting vessels from one level to another in a canal. The lift is about 46 feet in

height. The vessel is floated into an iron tank, and both together are then lifted or lowered as the case may be by means of cylindrical floats moving in circular wells extending 46 feet below the bottom of the lower level. In other cases, the tank with the vessel floating therein is lowered or raised by means of an incline provided with counter balancing caissons. There were models and drawings of a double filtration plant for municipal water supply and also several models of water works and reservoirs. The suspended tramway which has come into vogue in Germany was illustrated by plans and photographs. One large model of harbor work showed the successive stages of dike building with dredge in place for deepening the channel, the spoil being deposited behind the dike, all details being carefully worked out to scale. Another model of a long channel entrance requiring numerous range lights, fixed lights and red and white flashlights had all of these properly placed and in full working order, making a most attractive exhibit to laymen as well as the engineering expert. Germany has made remarkable progress in the canalization of her streams, a work which is still being pushed forward with vigor. The result of this work is shown in enormous increase in tonnage. Several types of canal lock gates were illustrated by means of working models. In fact, all of the models were made with the greatest fidelity as to detail and were marvels as to workmanship and finish. The well-known skill of the German draughtsman was displayed in the elaborate plans and drawings of different examples of engineering work. In fact, they were artistic to a high degree and at the same time set forth the details depicted so plainly that their meaning could be read at a glance.

Among the exhibits of Mexico, the plans and drawings for the drainage of the capital city were perhaps the most interesting to the engineers. An extensive series of photographs quite fully illustrated the character of architecture employed in their public buildings of all kinds and also their dwellings.

CHAPTER VI

MANUFACTURES

Advance in Home Comfort—Progress in Refinement—Exhibits of Thirty-four Foreign Countries—Domestic Displays Number One Thousand—Processes Illustrated—Industrial Art—The Clulow Collection—Model Cottage—Germany's Court of Honor—Nikko Gate—Swiss Chalet

THE thirty-four groups and 231 classes of exhibits assembled in the palace of Manufactures and the palace of Varied industries revealed innumerable articles for personal, domestic and general use—apparel, household articles, equipment, adornments, decorations which a few years ago were within the reach of the rich only but which are now rapidly coming into use by all of moderate means. Even the laborer can acquire many articles which were luxuries of the few before the perfection of manufacturing machinery cheapened them. Development of industrial art has been wonderful in the variety and distribution of its products and the consequent influence upon public taste. Articles to please the eye, articles of utilitarian character for the home in infinite variety were exhibited and sold at prices which were fractions of those asked at Chicago in 1893. To what extent the visitor took advantage of opportunities offered by the Exposition to satisfy his demands in these directions is shown by the fact that the United States customs authorities turned into the treasury of the government almost half a million dollars as the net result of collections of duties on the foreign goods sold at the Exposition. As illustrating the complexity of the requirements of modern civilization, it may be stated that over 900 industries were represented by the exhibits of the two buildings devoted to manufactures and industrial art.

Thirty-four foreign countries participated in the exhibit of Manufactures, as follows: Argentine, Austria, Bulgaria, Brazil, Belgium, China, Ceylon, Cuba, Canada, Denmark, Egypt, France, Germany, Guatemala, Great Britain, Haiti, Holland, Honduras, Hungary, Italy, India, Japan, Mexico, New Zealand, Nicaragua, Norway, Portugal, Peru, Persia, Russia, Sweden, Siam, Switzerland and Venezuela. These countries occupied 500,000 square feet of the exhibit space of the two palaces, Manufactures and Varied industries.

The domestic participation was without precedent. Approximately a thousand domestic displays were installed as representative of the skill, capacity and wealth of the half million manufacturing establishments of the United States.

In his report to Director of Exhibits Skiff, Chief Milan H. Hulbert describes the principal displays:

The Palaces:

The manufacturers of the world made an unprecedented exhibition at the Universal Exposition of 1904. With very few exceptions, all industries classified in the department of

Manufactures were fully represented. The accommodations provided to house these exhibits were greater and supplied on a more elaborate scale than at any other exposition. Of distinctive and handsome architecture, the two palaces of Manufactures and Varied industries were the most prominently located upon the exposition grounds. Fronting the Plaza of St. Louis, adjacent to the main entrance of the Exposition, they were the first of the great exhibit palaces to be seen and approached and probably they received and entertained more visitors than any others. The two buildings were of similar outline and dimensions, each being hexagonal in shape and each 1,200 feet long by 626 feet wide. In height the palace of Manufactures was 60 feet, while the height of the palace of Varied industries was 86 feet. The combined net exhibit area of the two buildings exclusive of aisles was 835,508 square feet, approximately twenty acres. Two central courts—one in each building—both of which were employed for exhibits, contained 142,600 square feet. The court in the palace of Manufactures was roofed that in the palace of Varied industries exposed. A more definite idea of the physical extent of these two magnificent exhibit palaces may be gathered from the fact that they housed two and three-story structures of ordinary dimensions with ease. The interior arrangement of each building was well adapted to an effective installation of exhibits, the overwhelming effect of the vast area of each being relieved by the intercepting central courts. Ample light was afforded by large and handsome windows, and excellent ventilation was provided in both buildings. Particular consideration was given to public convenience and comfort in the way of broad aisles, checking booths, toilet rooms, telephones and other facilities.

By the division of the two exhibit palaces of the department into three industrial sections, all exhibits of industrial art, including furniture, interior decorations and upholstery, jewelry, art works in metals, toys, clocks, were assigned to the palace of Varied industries. The west half of the palace of Manufactures was devoted to exhibits of hard wares, articles for traveling and camping, undertakers' goods, hardware, plumbing, heating apparatus, lighting apparatus, ceramics and glassware. The east half of the palace of Manufactures was devoted to soft wares (in contradistinction to hard wares), covering textiles, leather, boots and shoes, costumes and industries connected with clothing, fabrics in cottons, woolens, silks.

The progress in industrial art since the Chicago Exposition was well shown by the exhibits installed in the palace of Varied industries. This display gave evidence of the marked and continued advance of the various nations of the world in the production of artistic wares. Particularly noticeable as reflecting remarkable development were the displays of art potteries, stained glass, art bronzes and art glass, cutlery, carpets and upholstery. Many extraordinary and handsome exhibits were also installed in each of the other two divisions of the exhibit of manufactures, presented in the palace of Manufactures, the items of which were as superior and representative as the settings in which they were placed.

Process Exhibits:

The exhibition of the machinery and processes of manufacture with the manufactured product, which may be regarded as the most important innovation introduced into exposition practice, was a notable feature and extended practically into every group of displays. This was particularly true of the domestic sections where process exhibits occupied 25 per cent of the total area assigned to displays of all classes. Among the particularly interesting process or operating exhibits in the domestic section were those showing the manufacture of hats, shoes, shoe leather, leather bags, traveling articles, rubber boots and shoes, cotton thread, cotton fabrics, skirts, corsets, blankets, silk ribbons, silk fabrics, woven silk tapes, stockings, suspenders, elastic web, art embroidery, artificial flowers, brooms, rope, woven wire mattresses, paper boxes, envelopes, pens and blank books. Engraving of cards and embossing of stationery; diamond grinding; housecleaning by compressed air and washing clothes by domestic water pressure were also illustrated. Each of these working

exhibits was installed upon a large and suitable section of space and constituted a complete and representative display of actual manufacturing operations, showing equipment, processes and evolution through every stage from raw material to finished products.

The process exhibits in the textile display were notably extensive and elaborate. A large and complete shoe factory was there installed and continued in operation throughout the Exposition, with a product of 300 pairs of shoes daily. This was a co-operative exhibit arranged by a group of prominent shoe manufacturers of St. Louis in combination with the manufacturers of shoe-making machinery. It fully illustrated the interesting and marvelously improved methods as well as devices of the modern manufacture of foot wear. Another elaborate operating exhibit in the textile section was that in which several manufacturers producing different articles of clothing participated with the manufacturers of the machinery employed. This was one of the most attractive live displays in the palace of Manufactures. It occupied a space of about 4,000 square feet upon which was erected a two-story and basement structure finished in white and gold. The lower floor was devoted to the reception parlor, handsomely furnished, and contained samples of family sewing machines. This reception room was flanked on either side with exhibits of factory machines in actual operation. Four of the participating exhibitors installed complete factories on a small scale and manufactured their respective products showing the adaptability of the machines employed to the manufacture of shoes, undershirts, underwear and corsets. The second floor of the booth was devoted to a rest room furnished with everything for the comfort of visiting ladies; as well as large show cases containing samples of work done on the machines there exhibited, such as complete gowns, waists, ladies' under garments, lace curtains, dressing room accessories, sofa pillows. The basement room was devoted to the exhibition of the numerous styles of machines made for special manufacturing purposes and formed in itself a representative display of these improved and remarkably performing devices. On the walls of the first floor of this exhibit were hung four art needle work pictures made in colored silks on sewing machines - "DeSoto Discovering the Mississippi;" "Marquette Discovering the Mississippi;" "Hennepin at the Falls of St. Anthony" and "La Salle Taking Possession of Louisiana." These excelled anything of the kind ever before attempted; they had much of the appearance of old paintings of a high order at a distance of a few feet. A novel operating exhibit in the textiles section was a skirt factory, one of the features of which was the completion of the garment four and one-half minutes after the measure was taken.

Collective Exhibits:

Another feature of the department of Manufactures was a number of illustrative collective exhibits representative of principal industries. While difficulty beset this plan on all aides it was carried out in a number of important instances, notably in connection with the American silk exhibit. Wonderful progress has been made in the silk industry of the United States in recent years, particularly since the Chicago Exposition. Where not much over a decade ago all the silk that was sold in the United States was brought from Europe, very little is now imported. This extraordinary progress was strikingly indicated by an exquisite co-operative exhibit made by the leading manufacturers of silk of the United States. This exhibit was elaborately installed in a series of handsome cases assembled in a co-ordinate group, each containing a rich selection of specimens of the silk loom's highest art. The cases were so placed as to form an enclosure in which was presented an operating exhibit showing the equipment and process of silk manufacture. In this operating display were four looms of the latest device, three of which manufactured silk fabrics of different kinds, the fourth producing twelve different kinds of silk ribbon.

An exhibit of equal importance and attraction with the excellent silk display was that of costumes and fashions, the exquisite items of which were installed in a handsome costume pavilion. This exhibit which was one of the most elaborate in the domestic section was

also co-operative and collective, its items being contributed, and the combined installation provided by the participants who were leading modistes of the United States. The costume pavilion in which this exhibit, which was called the American Costume Exhibit, was installed and erected at a cost of \$10,000. A novel idea in the exhibits of paper patterns was a display of gowns made of tissue paper showing the several styles of modern gowns and also styles worn for the past hundred years.

The exhibits of textiles and textile products which have been described among the process and collective displays, while important and peculiarly illustrative, were but a small part of the representation in this class. The displays of textiles generally were numerous and extensive, including raw materials, manufactured fabrics, finished garments, and were of a high order, and in all cases were very attractively installed. Cotton, fibre, wool and silk fabrics in all designs, colors and styles of finish, together with wearing apparel for both sexes and all ages, and other finished articles, were presented in latest form and practically endless variety. Each class of these products was represented by handsome, in some cases most elaborate, individual displays. While the exhibits of women's wear were naturally in predominance, the illustration of the habiliments of men was not neglected or slighted. Handsome installations of under wear, hose, shirts, collars, neckties, vests, trousers, coats, suits, hats, gloves, suspenders, were presented by leading manufacturers, each class of articles being set forth in exhaustive variety and in the latest styles. Beside the working exhibits of shoes and leather, numerous and remarkably handsome displays of the finished products were made. Among the rich booth displays of footwear was one made by a St. Louis manufacturer containing a pair of gold kid slippers with buckles set with two large solitaire diamonds weighing over seven carats and valued at \$1,000. These slippers were offered to the one estimating nearest the total paid admissions to the Exposition. In a large and attractive exhibit of corsets one diamond studded brides' corset valued at \$10,000 served to attract the attention. The exhibits of laces, embroidery and needle work were numerous and of extraordinary variety and quality.

Industrial Art:

In the extensive division representing modern designs and examples of furniture, interior decoration, a series of elaborate displays was presented. A particularly distinguished exhibit illustrative of interior decoration was a suite of three rooms installed by a large New York firm, manufacturers of tapestries and interior decorations. The suite included an elaborate dining room, the main feature of which was a series of four tapestries representing the four seasons, Fall, Winter, Spring and Summer, and a fifth tapestry entitled "Abundance." Each picture represented the labor of one man for three years and all were especially designed for this exhibit. The ceiling of the room was a beautiful oil painting on canvas. The furnishings were carried out in Louis XVI style and were valued at \$50,000. The mantel and sideboard were made of Campam Melange marble ornamented with French bronze. The woodwork was French walnut carved and gilded, and the furniture was covered with tapestries to match those on the walls. The numerous other handsome displays of interior decoration and furnishings embraced further distinguished examples in every variety illustrating the decorative treatment and equipment of the public house as well as the private home. The exhibits of furniture were more elaborate and of greater variety than ever before assembled. The artistic excellence and general introduction of furniture of quaint and distinctive design reflecting old patterns, also of metal furniture, notably brass beds, was emphasized. Remarkable and numerous examples of stained glass, including a stained-glass court with twenty-eight rich designs, faience, marble and metal tiling and ceilings, parquet flooring, were presented. The exhibits of upholstery work, also of carpets, rugs, tapestries, wall paper and wall coverings of every kind were rich and profuse. Among the exhibits of floor and wall coverings a full-size model cottage was shown, each room of which was furnished with a material of the nature of oil cloth, made to imitate wall paper and

leather. The effects obtained were remarkably good and by a combination of color and design five charming rooms were produced: kitchen, butler's pantry, dining room, bath room and office. A peculiarity of this material is that it does not lose color like wallpaper and stands washing with soap and water like any other on cloth. Among the furniture displays a novel and handsome exhibit was a completely equipped office in which were displayed as in use the latest varieties of modern office furniture and fixtures.

Ceramic Art:

The ceramic display was one of the most comprehensive and attractive included in the palace of Manufactures. It was thoroughly representative of the progress that had been and is being made in the various departments of this rich art, including complete exhibits of coarse and fine building materials, architecture and decorative faience, plain and rare earthenware, pottery, porcelains in extensive and extraordinary variety. A number of installations of this character were of special excellence representing the products of some of the leading potteries of the country and the highest achievement in ceramic art. Possibly no displays presented in the palace were more attractively installed than those of art pottery, statuary, bronzes, lamps, bric-a-brac and decorative pieces in copper, brass, silver and other metal. Exhibits of this character were presented in remarkably rich profusion, some being of such merit as to suggest their presence in the palace of Art among the exhibits of applied art. Some striking exhibits of religious statuary were noted in this series of displays.

Numerous elaborate exhibits of clocks were presented in which the adaptation of these domestic time measures to the purposes of interior decoration was emphasized. The display of hall clocks was impressive, that of wall and mantel clocks ornate. An exhibit of importance and unique interest in this class was the mechanism of the great clock with living shrubbery dial on Agricultural Hill, reference to which is made in the description of exhibits of horticulture.

The representation of art metal work was extensive and indicative of the rapid progress made in this direction in the United States since the Chicago Exposition. In this group a notable exhibit was that of architectural bronzes made for the decoration of the New York home of a wealthy senator of the United States.

The displays of tableware, china, glassware, silver, gold, cutlery, were numerous and elaborate. A number of rich exhibits of cut glass were made, one containing many rare and exquisite pieces including a mammoth punch bowl set and table of solid cut glass; another contained the largest cut glass vase in the world, valued at several thousands of dollars. The exhibits of cutlery were notably handsome and comprehensive. Among them was a splendid display in which every gradation in progress of manufacture from the bar of steel to the highly tempered faultlessly finished blade was shown. Specimens of cocobolo pearl shell and the horn of the buck and every process through which they go to produce the finished handles were presented in this exhibit. Another interesting operating exhibit in the cutlery section illustrated in complete detail the manufacture of pocket knives.

Gold and Silver Wares:

Among the exhibits of silver and gold ware one display installed upon an elaborate scale by a prominent eastern manufacturer was unusually attractive. It contained specimens in silver and gold of every description. Among the most beautiful of the items of the collection were a toilet set of twenty pieces made of 18-carat hand wrought, delicately chased gold, valued at \$4,500; a dinner service of twenty-four pieces of band wrought silver, valued at \$17,000, and a tea set of six pieces with waiter, Louis XV style, heavily chased, valued at \$3,200. A complete line of ecclesiastical goods was presented in this display which had for its most important item a chalice and paten of 18-carat gold, elaborately studded with precious stones and embellished with twenty-four enamels; the remarkable

feature of this piece was that the enamels were executed directly on it and were all put through the bake at the same time. This display contained many exquisite specimens of jewelry. Another elaborate exhibit of gold and silverware also of jewelry was made by a well-known St. Louis company; it contained many rich and exquisite articles representative of the highest products of the gold and silversmiths as well as of the jewelers' art. In the rich tableware collection, a complete silver service of 625 pieces and a silver punch service for the United States battleship Missouri were among the more distinguished items. The jewelry display contained a profusion of rich ornaments embracing collections of exquisite pieces in rare rose and fleur-de-lis designs, also in historic and modern designs, set with rare stones, together with a large collection of rich diamond and pearl pieces of special and original design, all of which deservedly attracted much attention.

Crown Diamonds:

A rare exhibit of diamonds and American pearls was made which contained what was declared by connoisseurs to be the largest and most ornate jeweled necklace seen in this country. This necklace was massive in all its proportions and was composed of diamonds and pearls of extremely large size and excellent quality mounted in gold and platinum, the pearls and diamonds set alternately. In the entire piece there were 700 diamonds weighing in all 878 carats, and fourteen pearls weighing 1,100 grains. Two of the largest diamonds weighed thirty carats each while the others graded downward in size to sixteen carats. The largest pearl weighed ninety-eight and one-half grains. Each of the other pearls and large diamonds was set in a cluster of fourteen smaller diamonds interset with ten still smaller stones. The intrinsic value of the necklace was about \$260,000, but the sentimental worth of the piece from the standpoint of the connoisseur was many times that owing to the historical associations of some of the principal gems in its composition. Among these were the French crown diamonds which in themselves have a history full of tragedy and pathos covering the period of Napoleon's desertion of the beautiful Josephine, and some stones obtained of the famous Madame Humbert of recent times.

An exhibitor of imitation diamonds displayed very effectively a collection of replicas of the crowns of the royal beads of Europe executed in plated gold and imitation stones. The collection included crowns of Siam, Russia, Denmark, Netherlands, Italy, Germany, Austria. The operating display of diamond cutting in the jewelry section attracted much attention. This exhibit, which was installed by a Chicago company, contained interesting specimens of diamonds in the rough as found in original clay deposits, also of finished and partly finished gems.

An extensive and handsome exhibit of fine stationery installed by a large jewelry house of St. Louis was one of the features in the section devoted to this class of exhibits. An adjunct of this display which was the subject of interested inspection by all visitors, was a working exhibit illustrative of the processes of engraving, embossing, printing and other details attending the production of refined and dainty stationery. Prominent in the exhibit of stationery was an extensive display also made by a St. Louis concern, manufacturers of stationery on a large scale, of blank books the perfection of which was the source of much comment. An interesting exhibit showing the process of the manufacture of pens was made. It included an elaborate series of blanks, illustrating the different styles employed and the stages through which they pass from the first cut out of the flat sheet of steel to the finished instrument. Elaborate exhibits of fountain pens were presented.

An extensive variety of novelty, utility and ornamental articles made of leather and the skins of reptiles was shown. The superior character of the display of articles and materials of this class definitely illustrated the remarkable advance that has been made in the refined treatment and application of animal and reptile skins in more recent years. From pocket-book to portmanteau and mammoth traveling trunk the scope of items in this collection was comprehensive in an extraordinary degree and illustrated every grade from plain to

the most elaborate. In almost the same variety and equally superior quality were installed exhibits of rubber goods-heavy and delicate articles made of rubber from rubber hose and rubber cushions to rubber combs and rubber sponges.

An interesting series of exhibits was presented in the group devoted to toys and games. The handsome display of playing cards included the famous "Clulow Collection" known the world over as the most comprehensive collection of ancient cards and works on card playing in existence. It took sixty years to assemble this extraordinary series, and an outlay of over \$40,000. The cards in the collection comprise every style, design, and material from the fourteenth century to date, and the works on card playing from 1613 to 1904. A very interesting volume in the group was "A Treatise on the Game of Whist" by Edmond Bayle, published in 1748. In addition to the "Clulow Collection" the exhibit included queer cards of all nations, hand-painted buckskin cards from the American Apache Indians, Chinese playing cards and card dominoes, Japanese, Russian, German, Austrian, Spanish, French, Mexican and South American playing cards. Among the exhibits of indoor games and equipment were many handsome installations, notably an elaborate exhibit of billiard and pool tables and auxiliaries.

Utility Fixtures:

Utility and service fixtures and equipment were prominent features of the exhibit of hard wares. A most interesting and effective display of heating apparatus was presented in a model cottage containing living room, dining room, bed room and bath room. The entire cottage was furnished with a hot water system or heating showing the different patterns of radiators. The aim of the exhibit was to show that the radiator could be decorated to harmonize with the furnishings of any room. By the middle of July 80,000 people had registered at this model cottage.

The exhibit of heating, cooking and ventilating apparatus in general was very complete containing displays by practically all of the principal manufacturers of the country. A number of important and representative exhibits of this character were installed by St. Louis concerns. The variety of cooking and household utensils presented was remarkable and these were installed in peculiarly unique and attractive settings. One display of this character was notably decorative though only the articles on exhibition were used in its organization; another exhibit was presented in a booth the dome of which was an immense tea kettle. A model kitchen was installed in service in connection with the refectory attached to the dormitory occupied by the classes of the model school for defectives, which was one of the exhibits in the department of Education.

The lighting display was notably representative. In addition to an elaborate display of lighting fixtures of every variety it included what were without question the most comprehensive exhibits of gas apparatus that have ever been made. Each of these installations occupied a space of 40x60 and constituted a completely equipped plant ready for the manufacture of gas and by-products.

The exhibits of plumbing equipment, which included examples of the modern sanitary bathroom and all appointments, possibly as much as any other displays of the Exposition reflected the high degree of civilization attained by the world and more particularly by the United States, which leads in these refinements. The highly improved and effective laundry machinery included a novel working display illustrating modern cleansing processes. The operating exhibit of equipment and methods for thorough and sanitary house cleaning by means of compressed air was one of the real triumphs of modern housekeeping. In this class an interesting exhibit of carpet sweepers was installed. A feature of this exhibit was a series of small show cases in which sweepers were kept in operation-constantly moving back and forth the full length of each case and apparently at their own volition, the propelling mechanism being invisible. Another unique exhibit of carpet sweepers was

made in an elaborate booth the canopy of which was a mammoth sweeper perfect in every detail of construction and supported by solid mahogany columns. The base beneath these columns was also of mahogany and the finish throughout typified the highest degree of the art of wood finishing. In the panels of the booth below the rail was shown the large variety of selected veneers and solid woods used in the manufacture of the sweepers exhibited. The mammoth sweeper forming the canopy was operated by electricity and the revolving wheels of this big sweeper attracted attention. An idea of the size of this machine can be formed from the fact that its wheels were six feet in diameter and weighed 250 pounds each. The gigantic ball of this sweeper stood in erect position, the distance from its socket to the floor line being twenty-eight feet. An automaton life size, the only one of its kind ever built, typifying a neat housemaid was installed in this booth and was regularly put through all the movements of sweeping even to dumping the machine. Another original and interesting attraction of the display was an electric sweeper tester. This device kept two sweepers moving backward and forward and reported the distance traveled.

Many motion exhibits of similarly novel and interesting character were presented as auxiliary to the extensive series of actual manufacturing displays. In the exhibit of barber chairs was installed the largest barber chair in the world. It stood about ten feet high and was five feet wide; by pneumatic pressure the chair was in continual operation, raising, lowering and undergoing various evolutions of adjustment.

The Hardware Section:

An enumeration of the principal items in the general hardware exhibit would require a catalogue in itself as the display as a whole in addition to being the most attractively installed was the most important and comprehensive ever attempted. Implements and tools of all kinds, every variety of article, novelty and hardware device for domestic use, building hardware in infinite variety, improved metal and other structural materials, hardware store fixtures were included. Two model hardware stores and a model grocery equipped with fixtures complete, safes, cabinets, keyless locks, fire arms, burglar alarms, were exhibited.

Among the large variety of structural materials shown were exhibits of building glass, the feature of one of which was a crystal building erected to demonstrate the uses of wire glass. This miniature crystal palace was artistically illuminated by electric lights and was particularly well adapted to show the various applications of the new invention which it illustrated including the safeguarding of buildings against the progress of fire. An interesting display of bent glass was made in addition to comprehensive displays of glass jars and vessels. A number of exhibits of interior structural materials intended to take the place of tiles and marble were installed as in service.

A unique feature of the hardware section was an elaborate display of wire rope made by a St. Louis firm, the entire construction and setting of which was of this material in various forms including cables, fence wire, fence posts, office enclosures. Where necessary the rope was heavily gilded or slivered to give it proper touch of color, which added much to the attractiveness of the display. The center piece of the exhibit was an immense coil of cable. To illustrate the great weight of such a full-sized cable and the number of horses necessary to haul it a miniature reproduction of the reel was installed alongside of it, the miniature being set on a wagon with twenty-four horses attached. This display illustrated better than any other exhibit in the department the fact that with careful study and endeavor any article can be properly and tastefully installed. Few commodities lend themselves less to an artistic installation than wire rope; the success of this very attractive installation well indicated the possibilities in this direction.

The principal attraction of the hardware section was an elaborate national exhibit installed by a St. Louis establishment. A main feature of this display, which covered a space of 70x40 feet and was possibly the subject of as much comment as any commercial exhibit within the exposition grounds, was a monumental arch which framed a landscape view of

large size, the design being executed in every detail and most ingeniously with hardware materials. A windmill of full size and in operation, its body and arms entirely covered with axe blades, stood at one end of the arch, the whole installation being enclosed by a railing of sledges and hammers alternately with a series or facade of handsome show cases filled with hardware products. So well-conceived and designed and so admirably constructed was this display that it earned the verdict of being by far the most unique and attractive installation of the class of materials it represented, and by the International Jury was awarded a special gold medal for being "the best, most complete and most attractive installation in the department of Manufactures." The great arch in particular constituted an unique example in exposition installation, its details being set forth with remarkable accuracy and effect. It exemplified the adaptation of the architecture of the triumphal arch to the theater proscenium, the main facade of the arch representing the full stage front with drop curtain, ornate wall treatment and successive arch decorations. The items of the landscape including house, sun and flowing water, were presented with entertaining accuracy, the flow, waves and fall of water in the river shown being reproduced by the clever arrangement and manipulation of chains and auger bits. In the composition of this handsome exhibit over 12,000 pieces of hardware were employed, including almost every variety of hardware product from the carpenters' pencils of which the hunter's cabin in the curtain picture was constructed, to shears of which a pair seven feet long was presented as a decoration of one of the bases of the arch. Saws, knives and other tools, also building hardware were presented in great variety and in decorative combinations that forced attention and admiration from the dullest observer. A pocket knife weighing 225 pounds and eleven feet long, open, the blades of which were operated automatically, formed a decorative panel at the base of the arch opposite to that occupied by the mammoth shears. Five thousand axes were used in the decoration of the windmill which was forty-five feet in height.

Elaborately installed and operating exhibits on the order of that just described were characteristic of the displays in the department of Manufactures. Particularly conspicuous were the number of model factories presented in active operation, making before the eyes of visitors the various articles that are so familiar in their finished state but of the process of the manufacture of which so little is known by the general public.

Foreign Exhibits:

The exhibit of Manufactures was especially noted for the number and high character of its foreign displays. In this respect it far surpassed the great array of similar displays at the Universal Exposition at Paris in 1900 which had been considered up to that time the best collection of the world's manufactures ever made. As a part of the foreign display in the department of Manufactures practically all interior decorations and furnishings of the foreign national pavilions must be considered. These rare articles and this rich material were provided by the manufacturers without expense to the participating governments in order that they might be considered as exhibits and entered for award. The examining and Judging of these displays were important parts of the jury work in the department of Manufactures. The foreign sections in the department of Manufactures deserve special mention. In many cases they far surpassed anything of the kind before attempted. The brief review of these exhibits which follows does many of them inadequate justice.

The progressive Argentine republic presented an excellent display. Among its more interesting installations was an exhibit of wax matches, representing one of the principal industries of the country. Displays of furniture made from the woods of the country; leather used for all purposes; shoes, shoe patterns; mosaics in granite; artistic pottery; safe locks doors; knitted ware and hats were also made. The exhibit was enclosed within a handsome facade.

The exhibits representing Austria in the palaces of Manufactures and Varied Indus-

tries were known as the Austrian "commercial section" in contradistinction to the government exhibition which was made in the Austrian national pavilion. The space allotted in the regular exhibit palaces was occupied by the displays of several manufacturers who had co-operated to install a section without the aid of the government. Each factory had its individual space and attendant, but all had uniform counters and general style of installation. The main object of this commercial exhibit was to sell the articles displayed. It contained a variety of exquisite specimens of Austrian industrial and applied art in pottery, glass and metal. The exhibits of interior decoration and furnishing including rare art objects, silver and goldsmiths work, clocks, Jewelry, carved woodwork, furniture, upholstery, carpets, rugs, ceramics, enamels, presented in the Austrian national pavilion were pronounced to be in many respects superior to any ever seen in this country.

Belgium presented an extensive display of manufactured products all of which were installed in its national pavilion. Each item of this display was distinctive, handsomely and effectively arranged and representative of the marked advancement of the Belgian people in the industrial arts. Among the more prominent features of the exhibit were the examples of interior decoration and the large and exquisite variety of materials, furnishings and art objects employed in the same, together with drawings and designs for decorative work. Handsome exhibits of furniture, carpets, tapestries, ceramics, porcelains, decorative stained and plate glass and glassware, lamps, statuary, were presented. The display of textile fabrics-cotton, wool, silk - and of machinery as well as finished cloths and garments was of a high order and included a rare exhibit of handsome laces. Displays of jewelry, leather goods, basketry and work in cast iron and bronze were also made.

Brazilian Feather Flowers:

A feature of the handsome Brazilian section was the display of flowers made from bird feathers and beetle wings. The most remarkable piece in this rich collection was a pansy composed of 2,000 feathers. Other exhibits illustrative of Brazil's industries were paper made from bamboo as a basis for wood pulp, fibres and products in great variety, brushes of every kind, brooms, straw and felt hats, leather, shoes, trunks, furniture, hammocks, products of cotton, linen, wool, jute. A new and important industry was well represented by an exhibit of aramina. It is thought that this fiber will soon take the place of hemp and flax. It is made of a Brazilian plant treated in about the same manner as flax and is noted particularly for its flexibility and resistance being adapted to the manufacture of carpets, curtains, table cloths, oil canvas, sails for ships, as well for many finer fabrics.

Attar of roses, one of the principal exports of Bulgaria, was well displayed in the section occupied by that country. In the center of this exhibit a very artistic fountain was installed which dispensed this delightful perfume and attracted large crowds of visitors. An extensive display of rugs attractively installed was another principal feature of the Bulgarian representation. Further distinctive items in this display were cutlery, ceramics, silks, embroideries and a rich collection of native costumes.

Canada was represented by an interesting exhibit of automatic toys.

Ceylon installed an interesting exhibit in its national pavilion. Prominent in the display were collections of jewelry, carved ivory, carved wood and furniture, laces, embroideries, hand painted cloths and fancy articles.

A rare and remarkable exhibit of manufactures was presented by China in connection with its general display which was installed in the palace of Liberal Arts. The collection of silverware, cloisonne and enamel work, jewelry, fancy articles in ivory, tortoise shell and sandalwood, basket work, leather goods, carved and inlaid furniture, cabinets, screens and stands, silk rugs, carpets, tapestries, porcelains, glassware, silks and silk worm culture, handmade embroideries, silk and cotton laces, all of which were offered in unique and elaborate array and settings which equaled in artistic excellence and popular attractions any of the exhibits of the Exposition. This remarkable display included also an exquisite collection

of native robes and rare exhibits of fans, parasols, artificial flowers, hats, canes. In the rich ceramic collection were two vases of exquisite workmanship and great value which were a notable attraction.

A small but comprehensive exhibit was made by Cuba in the department of Manufactures. Its displays of leather, shoes, rope, tile, and many other commodities were a surprise to the average visitor who considered agriculture to be the island's only commercial interest.

The principal feature of the exhibit made by Denmark was the royal Copenhagen ware with its blue fluted porcelain under glaze, produced in more than 1,500 forms. The Flora Danica dinner set displayed was made by the royal Copenhagen manufactory in the last part of the eighteenth century and was a gift to the Royal Empress Katherine II. It consisted of 2,000 pieces decorated with different plants and flowers representing the Danish flora and was of great value. An interesting item in the Danish jewelry section was a piece of a cross found in the tomb of Dagmar in the eighteenth century and given to the Princess of Wales. In this cross was found what was reputed to be a splinter of the Holy Cross. Reproductions of bracelets found in the time of the Vikings 800 to 1,000 years ago were also displayed in this section. Another interesting display was the Tanagi statuery, a reproduction of statuery 5,000 years old. Most of these reproductions of antiques were made by the Denmark manufactory of Ipsen. Superior exhibits of embroideries and of inlaid wood were also presented in the Danish section.

The manufactures of Egypt were represented by several exhibits of mats, also of tanned hides, native shoes and sheepskin rugs which were installed in the palace of Forestry and Fish and Game.

The Art of France in Manufactures:

The French display in the department of Manufactures was noteworthy for the representative and brilliant installations presented in each line. Among the principal exhibits was an extensive display of costumes, the most elaborate ever shown in the United States. It contained about 200 gowns of value ranging from \$100 to \$12,000 per costume. The exhibit was divided into two sections, one containing individual exhibits in separate show cases, by each of the leading costumers of Paris; the other, a collective exhibit installed in cases around a room softly lighted by electricity. This latter collection included some of the best creations of the finest costumers of Paris, the most elaborate of which was of black lace valued at \$9,000. Notable items in the larger costume display were a Russian sable coat valued at \$12,000; a white broadcloth dress with sable stole valued at \$3,500; a very peculiar gown made of the skin of a colt and closely resembling brown cloth, designed particularly for automobiling and valued at \$600; and a unique Russian sable three-quarter coat with invisible seams which was sold for \$1,900. This coat was exhibited for the workmanship as the results represented in it had heretofore been only possible in cloth. Other costumes of note were an ermine coat trimmed with sable valued at \$9,000 and a court mantle of gold embroidered velvet trimmed in Hudson Bay sable and ermine, formerly worn by a lady in waiting of the Empress Josephine. In addition to these elaborate displays the exhibits of general apparel of all kinds and apparel auxiliaries, including hats, underwear, shirts, collars, neckwear, hosiery, parasols, were very complete. The displays of textile fabrics of all kinds, cottons, wools and alike, velvets, laces, embroideries, were most elaborate and constituted a distinguished feature of the exhibit of Manufactures.

The French jewelry section was one of the handsomest and most elaborate ever installed. It was, indeed, one of the select and interesting features of the Exposition. In the center of the section in a case six feet square a rare collection of gems valued at approximately \$1,000,000 was shown, the most notable being a blue diamond of 16½ carats valued at \$100,000. This collection contained diamonds of all the colors that have been found up to the present time numbering forty in all, including a specimen of red diamond; a blue, white diamond of 42 carats, pear shaped, about 1½ inch long and 1¼ inch wide, valued at

\$80,000; and a very large canary diamond of 124 carats, larger by 18 carats than the Koh-i-noor and valued at \$85,000. A remarkable piece of jewelry by a designer of art nouveau in jewelry was a necklace into which the forms of 2,000 nude women were entwined to form the loops. The finest and most elaborate piece in the exhibit was for the corsage; it could be separated into twelve parts and made into a pendant, earrings, brooch, two pieces for the shoulder, and an aigrette. The entire piece was valued at \$42,000. The displays of silversmith work, also of watches, clocks and chronometers, were of superior excellence.

The exhibits of interior decoration, especially including those installed as the fittings and furnishings of the beautiful French national pavilion represented the climax of luxurious elegance. The richest furniture, carpets, upholstery, tapestries, hangings, wall and ceiling coverings and decorations, mirrors, frames, mantels, electroliers, tables, porcelains, tiles, ceramics, bronzes, glassware and stained glass that have been produced were presented in these collections.

The exhibits in each of the other sections of France were most interesting, notably those in the fancy articles sections, including rich toilet articles, leather and rubber goods and in the games and toy section. The bronze collection contained some of the rarest pieces ever exhibited in this country.

Made in Germany:

The German section in the palace of Varied Industries presented what was undoubtedly and beyond any comparison the most elaborate installation of exhibits and settings that has ever been seen at an exposition or elsewhere. It occupied the northeastern portion of the palace and covered an immense area which by its distinctive installation was practically set apart from the remainder of the building. The whole exhibit, facades and objects, reflected great credit upon the art, culture, progress and vitality of the German nation. On entering this really magnificent section through the main north door of the palace of Varied Industries the visitor could not but be forcibly impressed with its size, harmonious treatment and remarkable beauty. The large court into which this portal led, with its ceiling seventy-five feet high, its width of 200 feet, its walls of colored marble and mosaics, its many added decorations and bronze fountains, was fittingly entitled the "court of honor." in the middle of this superb court and overlooking all was the wonderful German eagle, each feather separately forged, the completion of which require the work of 100 men during one year. Scattered through the court and about it were a series of show cases, installations and rooms of most novel and beautiful design containing the best samples of German jewelry, silverware, Kaysersinn, furniture, tapestries, china porcelains, clocks, fancy articles, toys and other industrial art ware. The rear of the large court opened into an outside court representative of that of a model German country home. In the center of this exterior court was a large basin of water and a fountain at play. Surrounding it were the several living rooms of the house, ample in size and exquisite in appointment. The whole was designed by a well-known architect of Darmstadt and was called the summer residence of an art connoisseur. This suite of model rooms together with those which adjoined them on the interior of the palace of Varied Industries and surrounded the main court of the German exhibit was the mecca for lovers of the arts of interior decoration who visited the Exposition. Their equal-indeed, anything approaching it-had never been seen before. The aeries included a "gray sitting room," designed by celebrated artists and furnished by different German manufacturers, which was notable, among other things, for the peculiar and effective finish obtained by paneling its walls with black silk patch work wrong side out. A rich music room contained walls of inlaid wood and furniture in dead oak and a grand piano made of wood taken from a Roman bridge built by Caesar 2,000 years ago. In the four special rooms designed entirely by one architect, comprising smoking room, music room, hall and dining room, each detail even to the sofa cushions was worked out to harmonize with the rest of the decorations.

Especially pleasing was the method illustrated in some of the rooms of inlaying in the natural-colored wood so that by the color of the wood and the natural direction of the grain most beautiful effects were obtained. A unique exhibit was a child's room; the corners of the room and the angles of the furniture were rounded and every article of furniture in the room was washable. A very novel room was a reproduction of one in the town of Düsseldorf, entitled "a public reading room." This had all the tables and chairs covered with pig skin so that they could be washed with soap and water. The number and variety of music rooms shown were notable; they were large and small. Organ recitals were given in one or another of these rooms every afternoon and proved a great attraction. An important exhibit in this class was a series of model steamship cabins especially made for the new large steamer "Prince Eitel Frederich."

The exhibit of interior decoration and furnishing included rare examples of statuary, art bronzes and metal work, candelabras, chandeliers, electroliers, porcelains, furniture, tapestries, carpets, upholstery, wall and floor coverings, stained glass, glass mosaic. In this connection the richly designed and furnished rooms of the German pavilion were a practical and superior exhibit. The rare displays of classic statuary presented in the German section attracted much attention.

In addition to the display of interior decoration which was the most superior as well as the most extensive ever shown, many interesting exhibits of manufactured articles were presented in the German section. The amber room contained the most valuable and complete collection of amber ever assembled, embracing remarkable specimens of the raw material and every kind of finished product. The value of this collection was \$80,000. The exhibit of leather novelties was superior. Among the handsome exhibits of silverware and silver plated ware one was remarkable on account of the fact that while it had all the appearance of hand chasing it was machine made by a new process of stamping that exerts a pressure of ninety pounds to the square inch. A collection of ancient German silverware which was given to Harvard University by German citizens was displayed, having been loaned by the college to the imperial German commission. The exhibit of Kayaersinn was handsome and extensive and exquisitely installed, as were the rich exhibits of jewelry and tableware.

The ceramic hall contained exhibits by all of the large porcelain manufacturers of Germany, most noticeable perhaps was the collection of plates hand painted, each plate portraying some scene in the life of the great Napoleon. There were eighty of these plates each valued at \$150. The royal porcelain factory of Berlin showed unusually fine samples of its work, particularly a vase valued at \$2,000, four large plaques representing the four seasons, and a wall screen of nine dancing girls executed in porcelain. A large bowl decorated with many different kinds of flowers, a reproduction of one given by the Emperor as a prize at a large horticulture exhibit, and a dinner set made for King Frederick the Great in the eighteenth century, were other prominent items of the elaborate ceramic display. An ornate, varied and extensive exhibit of art glassware was presented.

Germany was also well represented in textiles displaying an especially handsome exhibit of laces and embroideries including in the latter class a wonderful reproduction in silk embroidery of Raphael's Sistine Madonna. The exhibit of toys in the German section was the most elaborate and attractive ever presented in this country.

The cutlery display made by Solingen firms was most unique. The cost of installing this exhibit alone was \$26,000 and the entire exhibit was valued at \$40,000. A feature of this installation was a mirror made of highly polished steel in one case all the different finishes of steel from the rough to the highly polished as well as the different grades and classes of steel were shown, including several samples of Damascus steel. Another case contained 3,000 pairs of shears, the smallest being one-half inch long and the largest seven feet long. Carving sets on exhibition here were valued at \$3,000 each.

The Model English Home:

The exhibit of Great Britain had very distinct features worthy of all the attention that was given them. A reproduction of the interior of a model English home representing a one-story country house of the early part of the eighteenth century, simple in its lines, was a notably superior and attractive exhibit. From the main entrance hall of this unique domicile, one passed into a dining-hall of the eighteenth-century style. This room was remarkable for the beautiful carving of its panels and furniture. The drawing room adjoining it was in Louis Seize style; the beautiful tapestries used for panels in this room formed an effective background for its old-fashioned gilt furniture. A bed room also of the eighteenth-century style was particularly noteworthy and contained a novel feature in the way of closet provision. In this room the entire wall space up to a height of six feet was used for a series of wardrobes set into the wall, making the wall area become in reality one long series of closets eighteen inches deep. In addition to this there were two closets of the ordinary five feet depth. The bedroom adjoining the closet room was entirely different in style and extremely quaint. The furniture here was covered with chintz and the old-fashioned four poster bed was an exact reproduction of those used in the seventeenth century. The nursery, perhaps the most attractive room in the suite, had green for its general tone and the furniture, certain pieces of which were especially designed for the use of children, was in indigo blue, making an attractive contrast. The bath room next in the suite had walls of marble in alternating strips of white and pale green up to the height of six feet, and above that plaster of a fine finish. This bath room contained a tub oval in shape which was sunk into the floor and entered by means of descending marble steps after the fashion of the old Roman baths. Following this impressive suite was a series of four rooms which were taken from the steamship "Ophir," used by the Prince and Princess of Wales on their tour of the world. Each department was reproduced in detail of appointment as installed upon the ship.

The decorations and furnishings of the British pavilion, the various rooms of which were furnished to illustrate different historic periods of England, constituted a distinguished feature of this class of display.

The English pottery exhibit was superb and contained numerous fine specimens of Doulton, Ruskin, Silcon and Elton wares. The total collection was valued at \$100,000. Tile and other ceramics were shown.

A lace court was an interesting feature of the British display. The outside of this court was decorated with paintings in the form of panels illustrating the uses of the various styles of laces from the sixteenth to the present century. Within was a large and valuable collection of lace costumes and all rare varieties of laces and embroideries made in England and Ireland. The exhibit of Irish linen, damasks and cambrics was extensive and elaborate.

A Revelation from Ireland:

A special and remarkably interesting Irish industrial exhibit was made aside from the regular participation by Great Britain, the displays in this collection being installed in a separate exhibition building erected in connection with the Irish Village on the Pike. The variety of products presented was extensive covering practically the full range of the department of Manufactures. The quality of the materials exhibited was of the highest grade of excellence and indicated a vigor, efficiency and refinement of manufactures prevailing in Ireland that was admittedly a revelation to the rest of the world. This capably presented display arranged by Irish industrial interests was one of the peculiarly interesting features of the Exposition.

Guatemala installed a variety of exhibits of manufactures in its national pavilion, the principal items of which were cotton and woolen fabrics, straw hats, boots and shoes. The principal features of the exhibit of its manufactures made by Haiti was a collection of hand-

made laces and embroideries. Other items of the display which was installed in the palace of Forestry and Fish and Game were fancy articles made from *lignum vitae*, bricks, shoes and leather.

The Holland section extended along the northeast wall of the palace of Varied Industries for several hundred feet making an effective and attractive installation. The main exhibits of this section consisted of Jewelry, pottery, leather, china, skates and fancy articles. The most important of these displays were of Delft and Rozenburg pottery. Both of these famous factories made interesting and important exhibits of their wares.

Honduras was represented by an exhibit of native woven hammocks which were included in its general exhibit presented in the palace of Agriculture.

The Hungarian House:

The exhibit of Hungary was installed in a unique setting which was a reproduction of a Hungarian house of the architecture of 600 years ago, fronted by a court yard enclosed by a high picket fence. The house contained a suite of four living rooms equipped complete. The dining room of this Hungarian home was designed and furnished in quaint and elaborate style. On the wall of the reception room which was richly set and finished was a large and interesting collection of glass and marble mosaics. The parlor was in Louis XVI style, the furniture being upholstered in real brocade of that century. The nursery was done in burnt and painted wood and was completely furnished even to the toys and play table. Large show cases of Hungarian jewelry and cameo glass were installed in the court yard. The jewelry display contained combinations of enamels, precious and semi-precious stones. Many jewel cases were shown. Exquisite examples of ceramic wares, porcelains, silversmiths' work, also copper, bronze and wrought iron articles, cabinets and inlaid work, silk rugs, carpets and wall coverings, laces, embroideries, were presented. Special features of the Hungarian exhibit were the hand wrought iron used in gates, doors, and the handsome bronze chandeliers in the building.

A number of important exhibits representing the manufactures of India were installed in the East Indian pavilion, including rare specimens of gold and silversmiths' work, jewelry, carved wood, carved ivory, ivory inlaid boxes, ceramics. Exhibits of furniture, carpets, rugs, matting, canopies, curtains and hangings of a high order were presented, also of jute and jute fabrics, and rich band embroideries on cotton, wool, silk and satin, with silk, cotton, gold and silver threads, including rich embroidered screens and fans. A central feature of the India display was the elaborately carved Jain temple illustrative of the exquisite native edifices of the type employed in Hindu worship.

The principal items of the Italian exhibit were installed in the palace of Manufactures and included rare collections of marbles, carved furniture, mirrors, pottery, glassware, rich fabrics, silks, laces and embroideries. This extraordinary series of displays was valued at approximately \$2,000,000. The magnificent collection of marbles contained 1,600 pieces valued at \$1,000,000. If any criticism could be made of this beautiful display it would indicate only that too many exquisite pieces were shown at one time. The section would, indeed, have presented a most artistic appearance if twice as much space had been given to each object so that it might have had a more adequate setting; but this was impossible. The effect of profusion was not lost, however, upon the visiting public which could not find adequate expression for its unbounded admiration. The rare Venetian and Florentine vases shown and the wonderful embroideries in gold and silver threads and hand painted, were objects of special interest and commendation. The Italian section in the palace of Varied Industries comprised extensive and exquisite displays of carved wood, Florentine frames and pottery, as well as a large and beautiful collection of mosaics and coral jewelry. Salvini pottery and pottery from Naples were notable in this section. Among the rare coral specimens were the largest piece of coral ever found and a coral necklace valued at \$1,000. Altogether the

Italian exhibits were of the highest order of merit and fittingly representative of the rare art and culture of the country which for so many centuries was the inspiration and source of the art of Europe.

Japan's Nikko Gate:

In both the palace of Manufactures and the palace of Varied Industries most elaborate and remarkably interesting exhibits were presented by Japan. In the palace of Varied Industries, a full-sized reproduction of the famous Nikko gate which stands before the temple of that name in Japan was erected as an entrance to the Japanese exhibit. Beneath and about this imposing portal a series of elaborate show cases were grouped in graceful and effective order, in which incomparable displays of embroideries, bronzes, porcelains, cloisonne, carvings in ivory, pearls, jewelry, gold and silver works, inlaid and enamel work, tortoise shell, lacquer work were installed. Surrounding the cases extensive areas were devoted to further exquisite and elaborate displays of Japanese products. An interesting feature of the Japanese representation was the "spring salon" a typical Japanese room the walls of which were hung with pictures in cut velvet. The room was further decorated with rare samples of cloisonne vases and furnished with typical Japanese furniture. Another room carried out in the Japanese style was the "autumn salon," and a third room was a reproduction of one of the interior rooms of the Nikko temple. The articles of furniture in this room were made for the imperial family over 1,000 years ago. Two cloisonne vases in this section were especially note worthy. They were the largest pieces of cloisonne ever manufactured being five feet high and valued at \$9,000. A very large collection of fine pottery and porcelain was exhibited, including a small satsuma bowl in the decoration of which, with a reading glass, one could count 8,000 butterflies, and the famous "monkey vase" upon the exterior of which 2,000 monkeys were discernible. Ivory carvings were shown in large variety; and particularly beautiful was a piece carved out of one elephant's tusk which represented a bridge being crossed by ten elephants, the latter grading in size according to the varying diameter of the tusk. This piece was valued at \$1,760. A large display of carved furniture included an especially fine example of an entire cozy corner of carved cherry wood valued at \$2,500. Many unique and beautiful pieces were shown in a valuable collection of bronzes including bronze garden lanterns, large dinner gongs, jardinières and incense burners. The lacquer ware products were displayed in many unique forms. One cabinet in the case at the Gate of Nikko was a reproduction of a cabinet given to the Emperor of Japan. This was a four-tier cabinet with doors, drawers and mirrors, about sixteen inches by thirty inches, valued at \$1,250. All the colors that could be produced in lacquer were shown upon it. A richly embroidered screen valued at \$10,000 and a large assortment of native costumes, among them that now so largely adopted by American women, the kimono, were other important items of the Japanese section. In the palace of Manufactures elaborate exhibits of raw silk and of silk and cotton goods, also of carpets, matting, tapestry, straw braids, basketry, artificial flowers, fans, toys, umbrellas and leather goods were presented. An exhibit of hats made of fine fibers from Formosa was installed in the palace of Agriculture. On the whole the Japanese exhibit and the settings in which they were offered rivaled those of any country participating in the Exposition.

Mexican Drawn Work:

Mexico presented an extensive exhibit which was handsomely installed within an elaborate facade. Among the more prominent features was a large and exquisite display of drawn work. Important exhibits of embroidery, sombreros, flowers made of feathers, a large variety of cotton and woolen goods, silk shawls, fibre products, leather, leather goods and shoes, were installed. Furniture of wood, rattan and bamboo, articles of onyx, artistic window glass, glass bottles, mirrors, porcelains, bricks, tiles and other clay products, a large variety of straw and fibre hats and a superior exhibit of silk hats were other notable items of the display.

Several exhibits of the manufactures of New Zealand were installed in the palace of Agriculture, the principal of which was a superior display of traveling robes and blankets and an exhibit of wood carving in relief.

In the Nicaraguan national pavilion exhibits representative of the manufactures of Nicaragua were presented. The principal items of the display included leathers, boots and shoes, furniture, cotton cloths, palm hats, embroidery, fibre products, hammocks and inks.

Norway was represented by a rich display of jewelry and silverware, also by handsome exhibits of tapestries, modern and ancient.

Peru installed several exhibits of its manufactures in the palace of Agriculture including representative displays of panama hats and cotton fabrics.

The exhibition of the manufactured products of Portugal was very comprehensive and its displays were capably and handsomely presented. Among the more prominent of these were representative installations of boots and shoes, embroideries, fabrics, hand-made laces and pottery.

The exhibit of Persia was among the most interesting in the foreign sections embracing wonderfully complete displays of both ancient and modern articles. The display of antiques in pottery, rugs, brocades, velvets, embroideries and other fabrics, also of bronzes, art work in metals, jewelry and silversmiths' ware, which belonged to a famous private collection, was very interesting and of great value. The modern display contained an extraordinary collection of rugs of great beauty, the value of one of which alone was \$17,000.

Owing to the Japanese war the exhibit which Russia desired to make was withdrawn. The commercial representation made by private interests included displays of silverware, silver articles, jewelry, ural stones, leather goods, carved wood cabinets, furniture, silk rugs, silk embroidery, drawn work, laces, furs.

A very interesting and novel display of the manufactured products of Siam was made. Among the more important articles shown were pottery, embroidery and basketry products. Exhibits of silverware, mother of pearl, articles in bronze, lacquer work, masks, toys, tools, household utensils, mats and looms, cotton fabrics and looms, silk fabrics and raw silk, hats, boots and robes were also presented.

An unusually attractive exhibit in the palace of Manufactures was that of Sweden. This display was installed in six rooms the first of which was filled with pottery known as Rorstrand a hard china painted under glaze. The second room contained a display of artistic tins and art bronzes and cameo glass. The decorations of the tin ware in this exhibit were notable because, instead of being made with the hammer they were exquisitely built up on the outside of each piece and had all the appearance of fine chased work. The other rooms contained an exhibition of Swedish cutlery and Swedish woodenware and pottery decorated by the Sgraffito method. This is done by painting the entire surface of the vase one color and scratching out the background to bring out the design. Embroideries and tapestries were presented. The entire exhibit of Sweden was of superior order and its materials were very valuable.

An attractive exhibit was made by Switzerland in a typical "Swiss chalet" which was erected in the court of the palace of Varied industries. This unique structure was attractively situated in the midst of a bright flower garden and with its setting made a very quaint picture. The displays within it included a large variety of very wonderfully carved woods; one piece, "A Bouquet of Flowers," in deep relief, had taken three gold medals at previous expositions. A novelty in the form of a wooden jewel case was made in the reproduction of a miniature "Swiss chalet," exact in every detail; even the wood was taken from various old chalets in order to get the correct coloring. The display included rare collections of jewelry, watches, clocks, leather goods, dolls, silk goods and hand embroidery.

Fibres, cables, ropes, tanned leather, shoes, shirts, straw hats and feather fans were presented by Venezuela.

CHAPTER VII

MACHINERY

Advancement in Power Generation—New Shop System—Exposition Power Plant—Steam, Gas and Fuel Building—Arc Lighting Units—Intramural Railway Set—Incandescent Illumination—Engines of Endless Variety—Latest Application Principles

IN the department of Machinery were included the various forms of apparatus employed for the development and use of all artificially created power other than electricity, the devices employed in the generation and application of which were presented by the department of Electricity. A combination exhibit of the modern instruments employed in the generation, transmission and application of power was made in the palace of Machinery and in the Steam, Gas and Fuel building adjoining. In these buildings was presented the representative collection of great power units which were employed in the power plant of the Exposition. In them were shown steam power as developed from coal and through boilers and applied to modern engines and thence to electric generators, also to turbines; gas power developed from coal by special process and applied to powerful gas engines, the latest form of power application; water power applied by high pressure pump to powerful water wheel; compressed air power which might be designated power in its refined form, for the precise and delicate application of power.

The improvement effected in the instruments and methods of power as reflected by this practical exhibit was extraordinary. In the power plant thus assembled in the palace of Machinery was in operation almost twice the horse power of the Exposition of 1900 at Paris and of that at Chicago in 1893, and many times the power employed to drive all of the machinery at Philadelphia in 1876. The individual items of this unprecedented power installation were colossal in proportion. The largest engine at Chicago was 2000 horse power. A number of the engines in the great plant at St. Louis exceeded this capacity - one reaching the tremendous total of 5000 horse power. Several generators three times the size of the largest shown by the same manufacturing corporation at Chicago were in operation.

Era of the Automatic:

Further notable advancement was marked in the manner in which the various items of the power units were assembled and connected. In Chicago practically all of the machines were belted, some direct connected machines being

shown there for the first time. At St. Louis all of the machines were direct connected to the engines. Another improvement noted was that while nearly all the arc light machines at Chicago were of 30 kw size, the largest exhibited being 36 kw, and all belted, the machines used for this purpose at St. Louis had capacities of 700 and 1000 kw each and were direct connected.

The introduction of automatic appliances and service was also a distinctive feature and indicated development. In the Steam, Gas and Fuel building, a fire-proof structure, the entire equipment was mechanical and automatic. Coal was brought directly into the building on railway cars. It was dumped into underground hoppers; then it was carried by link belts and buckets to a great storage bin. Conveying machinery took the coal from the bin as required, direct to the boilers where it was discharged into hoppers to be fed into the furnace by mechanical stokers. The ashes were dumped into hoppers and carried away in cars running beneath the furnaces.

Turbines a Significant Feature:

But, the significant feature of the machinery exhibit, especially to the scientific engineer, was the collection of steam turbines and gas engines devised to replace the monster power machinery now employed. The development in this direction to many minds was the most noteworthy new thing of the Exposition. A steam turbine shown in 1904 had the efficiency of a generator shown at Chicago while being only one-fifteenth as large. The only turbine exhibited at Chicago was a mere toy, somewhere from 5 to 15 horse power; a turbine at St. Louis while rated at 3000 horse power was capable of 50 percent overload continuously and 100 percent temporarily. Small gas and gasoline engines which were novelties at Chicago ten years before it appeared from the exhibits at St. Louis, are manufactured in endless variety and employed in numberless ways.

In the palace of Machinery was shown a collection of machine tools and miscellaneous machinery aggregating more than 60,000 tons in weight and exceeding \$8,000,000 in value. Since 1893 the development in this kind of machinery has been such as to encourage the establishment of many entirely new industries and to revolutionize others. What is known as the "new shop system" was a striking feature of this class of exhibits. Under this system the machine tools are brought in succession to the heavy metal which is to be worked instead of the metal being taken to the tools as was formerly the case. In lathes, milling machines, drills and grinding machinery, in stamping, punching and shearing machinery, the progress since 1893 has been amazing. Operations by the hundreds that required human agency are now performed by automatic attachments.

The layman could realize dimly the significance of this machinery exhibit; only the expert could appreciate how marvelous has been the development in air compressors, pneumatic tools, conveying machinery and automatic devices, to say nothing of entirely new machinery for manufactures of various kinds. Hundreds of machines every one of which bore dates of patent later than the World's Columbian Exposition were exhibited. This demonstration of recent invention was notable in every section.

In general, the apparatus and machinery for the development, transmission and application of power embraced in the classification of the department of machinery included principal items as follows: power originators, such as steam

boilers and gas producers of all varieties and all of their accessories; engines of all types and their accessories; all other motors, not electric, including hydraulic motors, wheels, turbines, gas, gasoline, compressed air motors or engines; all apparatus for the transmission, application, regulation, measuring and testing of power, including cranes, pipes, cocks, gauges, pulleys; and machine tools of all kinds; arsenal tools.

In addition to domestic representation, the general machinery exhibit included interesting and important items from the following foreign countries: France, Germany, Belgium, Great Britain, Brazil, Japan, Mexico and the Netherlands.

A review of these exhibits as presented in the palace of Machinery and in the Steam, Gas and Fuel building, condensed from the reports of T. M. Moore, chief of the department of Machinery and R. H. Pierce, chief engineer of the exhibits power plant, follows:

Palace of Machinery:

The palace of Machinery was an imposing structure of graceful architecture, dominated by high towers and sloping roof; well lighted and ventilated. It was 1,000 feet long; for about half this distance it had a width of 500 feet. The remaining portion of the building had a width of 300 feet. The gross area of the building was 400,000 square feet, of which something like one-third was occupied by aisles and approaches. There were no courts in the palace of Machinery and the vistas through the building were free and open. The roof trusses were supported by compound posts set with regard to structural needs and the natural divisions of the building into suitable exhibit sections. An extensive gallery at the northern end of the building provided rooms for offices. The Steam, Gas and Fuel building was located 100 feet west of the palace of Machinery. It was of modern concrete construction, being absolutely fire-proof, with dimensions 300 by 320 feet.

The power plant naturally presented the most important and impressive exhibits and with all of its great units in actual performing service furnished what was considered the most practical object lesson ever given of the development, control and application of power. It contained all of the great steam boilers, engines and dynamos and other apparatus installed to supply the light and power of the Exposition, including the colossal pumps employed to send the water over the cascades and for fire protection and in facilitating the drainage of the grounds. Beside the vast amount of electric current required for the extensive and brilliant illumination of the grounds and buildings this plant supplied all of the electric power for the Intramural Railway, for the motors which propelled the cascade and fire pumps, and all other motors employed in regular and special service throughout the exposition grounds, as well as current for the automobiles and the electric launches.

Exposition Power Plant:

The power plant of the Exposition was indeed by far the most extensive and powerful ever installed for temporary purposes. Altogether it embraced fifty-one immense steam boilers, twenty-two steam engines, twenty-three generators, one gas engine, one tangential water wheel, together with accessory and auxiliary apparatus. Its steam generating capacity was 21,164 horse power. Its combined items supplied an engine capacity of over 30,000 horse power which was transformed into electrical energy in excess of 22,000 kilowatts.

Of the important units of the exposition power plant all except one principal installation made under contract-which included sixteen boilers, four engines and four generators of a total capacity of 12,000 horse power and 8,000 kw -were supplied by exhibitors and

entered as exhibits in service. These combined exhibit items were styled the exhibits power plant and constituted a working collection of steam, gas, hydraulic and electrical apparatus and machinery that proved an incomparably important and instructive exhibit as well as being of great importance and value in the service of the Exposition.

Of the series, the thirty-five steam boilers and their accessories, comprising automatic stokers, induced draft apparatus, boiler feed pump, heaters and purifiers; the gas engine plant, including gas producer and dynamo; and two 1,000-gallon underwriter fire pumps were installed in the Steam, Gas and Fuel building. In the west end of the palace of Machinery were installed the eighteen steam engines and eighteen electric generators of the exhibits plant together with their accessories, comprising condensers, pumps, exciter sets, steam and oil separators, traps, gauges, valves, instruments and switchboards. Here were also installed the tangential water wheel and its high pressure pump, compressors to provide compressed air power, locomotive and traveling cranes, hoisting and tackle used in installing and dismantling the plant, a fully equipped machine shop, and miscellaneous accessories to the power plant such as oil filters, filing devices, pipe covering. The four engines and four dynamos employed in the leased portion of the power plant and which with the sixteen boilers of this power set installed in the Steam, Gas and Fuel building, provided about one-third of the power yield of the entire plant-8,000 of the 22,760 kilowatts -were also installed in the west end of the palace of Machinery.

The cascade pumps were grouped in effective setting under the east cascade, and the set of sewerage pumps were installed in a special pavilion adjacent to the west end of the palace of Mines and Metallurgy.

Of the thirty-five boilers in the exhibits power plant all were of the water tube type. Twenty-four were horizontal, four vertical and seven of marine pattern.

Nineteen of these boilers were supplied by the Aultman and Taylor Company, and arranged in four groups: (1) four horizontal water tube boilers, designed for 225 pounds working pressure and having a rated capacity of 568 horse power each; (2) four horizontal water tube boilers of same type and horse power designed for working pressure of 176 pounds; (3) eight boilers of same type rated at 500 horse power each and designed for pressure of 175 pounds; (4) three vertical water tube boilers of Cahall type, each of 250 horse power, built for 175 pounds working pressure. All of these boilers were set in batteries of two, excepting the odd Cahall boiler. All were equipped with traveling chain grate stokers manufactured by the Aultman and Taylor Company. The group made a most powerful and splendid set of steam generators, aggregating a total of almost 9,000 horse power.

The Heine Safety Boiler Company furnished eight horizontal water tube boilers rated at 600 horse power each and built for working pressure of 176 pounds. These boilers were equipped with traveling chain grate stokers furnished as exhibits by the Green Engineering Company.

The Clonbrock Steam Boiler Company supplied one vertical water tube (climax) boiler, rated 250 horse power and designed for 250 pounds pressure.

The other boilers were furnished by foreign makers as follows:

Societe Anonyme des Etablissements Delaunay-Belleville, of France-three marine type water tube boilers rated at 500 horse power each and designed for 300 pounds working pressure.

J. and A. Niclausse, of France-two marine type water tube boilers rating 400 horse power each, designed for working pressure of 225 pounds.

The Duesseldorf-Ratinger-Rohrenkesselfabrik, of Germany-one marine type tubular (Duerr) boiler rating 500 horse power, designed for working pressure of 190 pounds.

Schuette-Kessel-Konsortium, of Germany-one marine type (Conti) combination water tube and fire tube boiler rated at 500 horse power and designed for 186 pounds working pressure.

All of these foreign boilers as well as the Clonbrock boiler were fired by hand. The foreign boilers are described as of marine type. Though exhibited as land boilers they were

of types developed for marine work and were rated on a marine basis.

The horizontal Aultman and Taylor boilers, the Heine boilers and the Belleville and Niclausse boilers were all equipped with induced draft apparatus supplied as an exhibit by the Buffalo Forge Company. The other boilers had individual stacks.

The water for all of the boilers was fed by seven pumps from one main suction line. These pumps were of various makes as follows: One Cameron, one Gould, one National, two Stillwell-Bierce & Smith-Valle, and two Warren. Feed water purifiers and heaters of the latest designs, chemical and non-chemical purifiers, boiler tube cleaners were furnished in service as exhibits by prominent manufacturers.

The Steam Tunnel:

The steam from the boilers in the Steam, Gas and Fuel building was conveyed into the palace of Machinery for application to the engines there through four lines of pipe set in a tunnel connecting the two buildings. These connecting steam pipes were necessarily of large dimensions: one, 18 inches; one, 16 inches; one, 14 inches, and one, 5 1/8 inches. The 18-inch pipe and the 16 inch pipe conveyed the steam from the 175 pounds pressure boilers; the 14 inch pipe took the steam from the 225 pounds pressure boiler, and the 5 1/8 inch pipe from the Belleville boilers. The remaining boilers were connected to the 16-inch main. The 14-inch main furnished steam only to the steam turbines. The 5 1/4 inch main connected only with the Belleville engine. All the other engines in the exhibits power plant were supplied with steam from the 16 inch and 18-inch mains. This piping, with the exception of that from the Belleville boilers was not an exhibit but was bought and installed at the expense of the Exposition Company. The hot air of the steam tunnel was exhausted by motor driven fans installed by the Sirocco Engineering Company.

The power plant was designed to have all of the large engines run condensing. The condensing water was taken in by a 30-inch suction from the lagoon just east of the palace of Machinery into cold well, and the discharge was from cold well through two 24-inch pipes into the lagoon, at a point south of the palace of Electricity.

All of the engines were directly connected to the dynamos which were arranged electrically on several distinct systems according to the service for which they were best adapted, as follows: general lighting and power service, 6,600 volt-3 phase-25 cycle; art lighting service, 2,300 and 2,400 volts-single phase, 2 phase and 3 phase - 50 and 60 cycles; Intramural railway, 550 volts-direct current; electric service in palace of Machinery and launch charging station, 250 and 110 volts, direct current.

In addition to all of the generators of the leased section of the power plant, four generators of the exhibits section were devoted to the general lighting and power service of the Exposition. This included all incandescent lamps for decorative and other lighting, all electric motor power, and the operation of the cascade pumps. The exhibit units employed in this principal service were a Bullock 3,600 kw, generator which was connected to an Allis-Chalmers vertical and horizontal compound engine of 6,000 indicated horsepower; a General Electric 2,000 kw, generator connected to a four stage vertical Curtis steam turbine of 3,000 horse power; a National Electric 1,500 kw, generator connected to a Hoover, Owens, Rentschler cross-compound vertical engine of Corliss type and of 2,250 indicated horse power; and a Bullock generator of 1,000 kw connected to a Hoover, Owens, Rentschler horizontal two stage steam turbine of 1,500 indicated horsepower; making a total of 11,750 indicated horse power and 8,000 kw supplied by the exhibits power plant and devoted to this general service. To this should be added a 150 kw 60 cycle single phase Warren alternator driven by a Skinner 200 horsepower single cylinder automatic high-speed engine, which unit was used to furnish incandescent lighting to the state and other buildings in the southern part of the exposition grounds.

The excitation for the Bullock 3,600 kw generator was furnished by a 200 kw Bullock 220-volt generator direct connected to an Ide "Ideal" 300 horsepower engine. This genera-

tor was also used as a relay in connection with the direct current systems as later indicated. The General Electric alternator was equipped with a 26 kw turbogenerator exciter. The National generator was equipped with a motor driven exciter operated from the mains of the 220-volt DC system and the Bullock 1,000 kw alternator was excited from the mains of the 220-volt DC system.

The Allis-Chalmers engine was equipped with the Alberger Condenser Company's "barometric tube" condenser. The General Electric turbine was equipped with a Worthington surface condenser which rested upon the main foundation and formed a base for the turbine. The Hoover-Owens-Rentschler vertical engine and turbine were each equipped with surface condensers of the Stillwell-Bierce and Smith-Valle Company.

Intramural Power System:

A second set of engines and generators was employed to supply electric current for the Intramural railway. This system comprised six engines and one water wheel, all direct connected to Crocker-Wheeler direct current railway type generators, over compounded for a full load voltage of 560 volts. The plant was organized into two groups. Group one, located in block 42, comprised a Lane & Bodley horizontal crosscompound Corliss type engine of 900 hp connected to 600 kw generator; a Harrisburg Engine Company horizontal tandem compound 600 hp, "Fleming" engine connected to 400 kw generator (also used in connection with motor service for the Pike); a Murray Iron Works simple Corliss type 800 hp engine connected to 500 kw generator; and an Abner Doble Company 160 hp tangential water wheel (with Lombard governor), supplied by a Janesville Iron Works pump and connected to a 100 kw generator. Group two, located in block 46, comprised one Buckeye Engine Company's 1,400 hp horizontal cross-compound engine connected to a 900 kw generator, and two Brown Corliss Engine Company's 760 hp, vertical cross-compound Corliss type engines, each connected to a 600 kw generator.

The exhaust of the engines of group one of the Intramural power plant went to a "counter current" surface condenser of the Alberger Condenser Company. The Janesville pump had a surface condenser on its suction which took care of its exhaust. The exhaust from the engines of group two of the Intramural plant was taken care of by a Wheeler surface condenser of the admiralty type.

The switchboard of the Intramural set, which was an exhibit of the Walker Electric Company, was of standard railway design and consisted of eight generator panels, a total load panel and seven feed panels.

Three direct connected power units were employed in the arc lighting service of the Exposition with a combined capacity of 2,700 kw - one of American, one of French and one of German make. The French unit was furnished by the Societe Anonyme des Etablissements Delaunay-Belleville of France, and was made up of a six cylinder vertical triple expansion marine type Belleville engine of 1,600 indicated hp direct connected to a 1,000 kw, 2,400 volt, 3 phase, 60 cycle generator manufactured by the Societe L'Eclairage Electrique. The engine was unique in that it was equipped with positive motion piston valve and ran at a speed of 330 revolutions per minute. The condensing system (surface condenser) was provided with the engine, and the air and circulating pumps were operated direct from the main engine shaft. The exciter was mounted direct upon the main engine shaft at the generator end.

The German unit consisted of a horizontal tandem compound engine of 1,000 indicated hp furnished by the Elsaessische Maschinenbau-Gesellschaft of Germany, direct connected to a 2,300 volt, 3 phase, 50 cycle generator of 700 kw capacity. The generator was furnished by the same company from the works of the Societe Alsacienne de Constructions Mecaniques of France, and was of fly-wheel type, with exciter mounted on the end of the main engine shaft. The engine was of a type peculiar to itself, having horizontal piston valves, those of the high pressure cylinder being of releasing type and those of the low pres-

sure cylinder having a positive motion. The condensing outfit was furnished by the same exhibitor and comprised a surface condenser, an air pump driven from the engine cross head and a motor driven centrifugal circulating pump.

The third unit consisted of a 1,000 hp vertical triple expansion engine of the well-known Willans type, furnished by the Bradley Manufacturing Company, direct coupled to a 2,300 volt, 60 cycle, 2 phase alternator, of the Stanley Electric Manufacturing Company. Condensation was furnished for this engine by a Worthington surface condenser equipped with a Worthington volute circulating pump (driven by a 26 hp Northern Electrical Manufacturing Company's motor supplied with current from the exciter) and a vertical twin beam air pump furnished by the George F. Blake Manufacturing Company. The exciter was a 30 kw generator furnished by the Northern Electrical Manufacturing Company and direct connected to a 50 hp compound Willans engine furnished by the exhibitors of the main engine.

A 400 kw Fort Wayne 250-volt generator direct connected to a Greenwald 600 hp horizontal cross-compound engine provided the direct current systems used in the palace of Machinery and at the launch charging station adjacent to the east end of that building. The 250-volt current was used for motor driven tools, crane motors, an electric elevator, accessories to the exhibits power plant, and for current for the direct current arc lamps in the palace of Machinery.

In connection with the 250-volt service there was installed in the space of the Crock-er-Wheeler Company a balancing set for use in connection with their four-wire multiple voltage systems for furnishing a multiple voltage to certain electrically driven tools. This was located in block 42 together with a switchboard for same, which was also an exhibit of the same company.

A service of 110-volts was furnished in the palace of Machinery by a 125 kw generator connected to a 200 hp horizontal compound automatic high speed engine both engine and generator supplied by the American Engine Company. The power from this unit was used to operate the coal handling machinery in the Steam, Gas and Fuel building.

An interesting item of the exhibits power plant was the R. D. Wood and Company's producer gas unit located in the Steam, Gas and Fuel building. This combination included a pressure producer of 350 hp capacity which furnished gas to the gas engines in the palace of Machinery, in addition to a 25 hp suction producer operating an adjacent gas engine which drove the automatic feed and coal elevator and conveyor of the larger gas unit.

The Pumping Equipment:

Aside from the boiler feed pumps already indicated, the important pumping equipment of the Exposition was furnished by Henry R. Worthington. This installation included the two 1,000-gallon underwriters fire pumps in the Steam, Gas and Fuel building, the three great cascades pumps of turbine type (under East Cascade), capacity of each 30,000 gallons of water a minute against a 159 foot head and with overload capacity of 20 percent; and the four centrifugal sewage pumps of volute type (located in pavilion west of the palace of Mines and Metallurgy) and designed to pump against an eighty-five foot head. The latter pumps handled a large part of the drainage from the exposition grounds. Regulators on the Worthington pumps were supplied by the Fisher Governor Company.

Two Laidlaw-Dunn-Gordon compressors, with displacements of 1,320 and 530 cubic feet respectively, supplied all compressed air service used upon the exposition grounds.

Smaller and accessory items of equipment employed throughout the power plant such as recording steam and water gauges, recording vacuum gauges, recording pressure gauges, indicating pressure gauges, test gauges, counters, planimeters, tachometers, thermometers, steam engine indicators, stroke reducers, pyrometers, oil fillers, were of the latest designs and furnished in service by leading manufactures of these highly perfected devices.

Two traveling cranes each of eighty-foot span-one sixty-ton crane furnished by the Shaw Electric Crane Company, and one 60 ton crane furnished by Pawling and Harnischfeger-together with two locomotive cranes, one of ten and one of fifteen tons, both furnished by the Brown Hoisting Machinery Company, were included in the exhibits plant and contributed materially in the work of installing and removing the heavy items of the plant and other exhibits. A hoisting engine with boiler and set of derrick irons installed by the Lidgerwood Manufacturing Company also gave excellent service in this connection, as did a number of spur geared triplex blocks installed by the Yale & Towne Manufacturing Company.

Other service items supplied in connection with the exhibits power plant were a 176 hp horizontal tandem compound engine (non-condensing), supplied by the Buffalo Forge Company and installed in the palace of Machinery, which, however, was not employed; and a complete gas plant, including suction producer and vertical gas engine direct connected to a 220 volt direct current generator exhibited by the Weber Gas and Gasoline Engine Company in the Steam, Gas and Fuel building, also not employed in service. An automatic electric elevator operated by push button was installed by the Otis Elevator Company in the east end of the palace of Machinery and used to connect the offices of the department of Machinery in the gallery with the main floor of the exhibit palace. This elevator was electrically operated and controlled. It was automatic in so far that it required the services of no regular attendant. The visitor stepped into the car, closed the door, pressed a button, and was carried to the door indicated on the button pressed. Its safety devices were most comprehensive, complete and effective. The car would not move unless all doors along its route were closed and locked; all doors when closed were automatically locked, and none could be opened save when the car was stationary and on a level with the floor under the particular door which it was proper to open. A practical machine shop made up of a representative collection of machine tools supplied by a number of exhibitors, and installed in one of the prominent blocks of the building constituted an important service exhibit and an auxiliary of the exhibits power plant.

General Machinery Exhibits:

In addition to the imposing power items which constituted the great operating power plant of the Exposition and which including the exhibit and leased units occupied the Steam, Gas and Fuel building and about two-fifths of the palace of Machinery, there was installed in the remaining sections of the palace of Machinery, chiefly in its central and eastern portions, an extensive series of representative displays of machinery of similar auxiliary as well as of distinct character, with accessories of every kind. These individually installed displays were carefully arranged in generic, systematic groups, each adequately illustrating an important class or phase of machinery. Many of the leading manufacturers who were represented by exhibits in service in the power plant were also represented by special displays installed in the general machinery exhibit. In addition to these, other prominent manufacturers participated in the display including a number from foreign countries. The foreign nations represented by exhibits in this general machinery section were France, Germany and Great Britain. Belgium presented a series of plans, drawings and photographs of machinery in the Belgium national pavilion; Brazil exhibited a steam engine in the palace of Transportation; Japan installed a number of minor machinery exhibits in the palace of Electricity, and Mexico and the Netherlands were also represented by small exhibits coming under the classification of the department of Machinery which were presented with exhibits in other palaces.

Of the larger machinery items such as boilers, engines, generators, turbines, it was natural that few be presented other than those in service-the latter making a complete display. A special exhibit of interest was made of this character, however, by a leading company, comprising horizontal and vertical water tube boilers, chain grate stokers, steam traps,

boiler heads and tubes, steam engine fittings, pumps, condensers. Sectional views of the boiler and stoker installation in this display permitted visitors to study the details of construction and operation. Prominent in this class of exhibits was an important display of steel furnaces for boilers. The exhibit also included a superior type of gas receivers and a display of steel welding methods and processes as well as finished examples illustrating the advantageous utilization of welded steel plate. Another exhibit of special interest presented examples of apparatus for burning fuel oil. An interesting display of automatic underfeed stokers was made; also an important exhibit of down draft furnaces for smoke consumption.

A representative display of pipe and boiler covering and material for the prevention of radiation of heat was made by a prominent manufacturing company in addition to its extensive display of these materials in service.

The representation of piping, valves, cocks, gauges, indicators, inspirators, injectors, testing apparatus and other steam fittings and auxiliary equipment surpassed anything of this character ever before installed. Eight large and superior exhibits of these auxiliaries and accessories were made by important manufacturers in addition to other displays. The scope of articles presented was complete and each variety was illustrated by a comprehensive and representative series of examples if not by an entire installation. One important and uniquely arranged exhibit in this section was devoted largely to valves showing various designs and sizes, including globe, angle, cross, lever and gate valves artistically arranged. Lubricators, oil pumps for lubricators, oil and grease caps, cocks, whistles, pop valves, water gauges, gaskets, steam packing were also items of this display.

In other extensive exhibits handsomely installed by well-known companies superior lines of stationary and locomotive inspirators were shown; also of ejectors, boiler washers, flue cleaners, globe and angle valves, pneumatic cylinder cocks, hose strainers, packing, oil cups, boiler checks, whistles and locomotive appliances. A representative grade of injectors, designed for high steam pressure and severe service, automatic injectors, double injectors were also installed. One notable exhibit contained a full line of pop safety valves designed to cover the entire range of stationary, locomotive and marine boiler requirements; another consisted of superior grade injectors designed for high steam pressure and severe service.

An elaborately installed display of steam, vacuum and pressure gauges intended to embrace every requirement in power practice included steam indicators, recording gauges, gauge glasses, speed counters, steam traps and apparatus for measuring and recording pressures, low water detectors and alarms, marine engine room clocks and a complete line of pipe tools, stocks, dies, ratchets and tongs, in an adjacent exhibit of gauges, valves, steam cocks and boiler fittings, was presented also an important exhibit of appliances for testing and regulating steam engines.

The comprehensive character and effective installation of the extensive series of exhibits in this section insured for them close attention from the inspecting public as well as by the members of the international jury.

Several attractively installed exhibits of high-pressure power plant accessories were made by prominent companies, including bent pipe work and extra heavy valves for superheated steam. The display also included a full line of steam, gas and water fitter's tools. A comprehensive exhibit of blowers, fans, engines, dynamometer and similar machinery was also presented.

Gas Engines Beyond Precedent:

Gas and gasoline engines and auxiliaries were presented in large variety. Especially were the domestic exhibits of this class superior. No such collection of gas engines had ever before been seen on this side of the Atlantic. Among the large number of exhibits in this line in addition to the display of the producer-gas plant in service were six leading displays made by six important manufacturers of the United States which were pronounced to be of

the highest order and fully representative of the belt practice and of the great progress being made in this important line of power equipment in this country. Many types of engines and apparatus were presented in the display including a series of marine gas engines. The large range of types and sizes illustrated the application of both stationary and portable gas engines to a great variety of uses, which was in many cases practically demonstrated.

One exhibit demonstrated that the field of usefulness for gas engines is not limited to localities where natural gas or abnormally low-priced illuminating gas is available. Some of the engines shown in this installation were operated by city gas; others were driven by gas of low calorific value generated in the power gas producers in the Steam, Gas and Fuel building.

Altogether, of the exhibit of gas engines at the Exposition, especially including the notable working installation in the Mining Gulch, it may be said that it combined by far the most practical demonstration of the feasibility and value of the gas producer gas engine combination that has ever been made in this country.

A combination exhibit of gas and oil engines contained an assortment of units ranging from one to thirty rated horse power and of both horizontal and vertical types. In this exhibit was illustrated the use of kerosene as a fuel in engines designed to generate electricity for power and lighting purposes, to pump water for residence, farm or irrigation use, to furnish power to operate elevators and mine hoists. A very complete exhibit.

An exhibit of hot air pumping engines, one in operation, was made, also a number of representative displays of air compressors, some of great capacity—one of 1,320 feet of free air per minute.

A number of handsomely installed exhibits of water also of gas meters, regulators, flush traps, testing appliances, meter provers, including high pressure and proportional meters were presented. A system of water storage and its operation was shown in one meter exhibit installed in connection with an operating display of gas engines for the demonstration of the accurate performance of the meters shown. The installation was an ingenious combination of engine, pump, weir and tanks, which permitted a mechanical computation of the flow of water against which to prove the service of the meter. An important exhibit of triplex geared power pumps and other appliances for boiler feeding was made in a handsome installation. Another important exhibit of pumps and condensers included a display of air compressors and a steam engine for hoisting. The exhibit of general pumping machinery was very extensive and included many superior installations. An important exhibit of this character was made in the Mining Gulch illustrating the utilization of pressure pumps in mining operations.

Important Foreign Exhibits:

France was represented in the preceding groups by several important exhibits, including examples of superior air condensers, also of steam turbines and their application to electric and pumping uses. An interesting starting device for marine engines, a hydro governor for water turbines, apparatus for the distribution of gas and water, gas and water meters, and exhibits of fans and blowers were presented. A French contribution of first importance was an elaborate compilation of data concerning the working of steam apparatus. Other exhibits were a model of steam engine, water gauge glasses and protectors, a portable boiler and anti-scaling compound.

Interesting German exhibits were presented in these groups, notably a representative display of examples of a great variety of boiler feed appliances, steam gauges, cocks, valves, traps, regulators, governors, indicators, reductors, registers, lubricators, counters, recorders, speed indicators, dynamometers, pressure gauges, weighing machines, pumps and fire extinguishers. A number of fire extinguisher exhibits were installed in service in the German national pavilion. Other interesting German exhibits were of indicator testing apparatus, tachometer, copper and metal jointing rings, metallic packing and smoke analyzer.

An important exhibit of road locomotives with jib cranes and traction wagons was installed in the British section, also a superior exhibit of fans, blowers, pumps, air cooler and test box in operation. Examples of speed reduction gear and of lubricating oils were presented.

The display of transmission, conveying and hoisting machinery including the important items in service previously mentioned was highly representative. A number of important and illustrative exhibits of belting were presented including one in which were shown the processes of the manufacture of leather belting. This was a most interesting exhibit. The presentation started with an exhibit of belting butts, that is, of hides tanned and trimmed for belting purposes. It next showed the curried leather prepared for belting and the currying process, working the greases out of the leather and making it pliable. The next process illustrated the cutting of the leather into various sizes of belting and the location from which the strips were taken; the next showed the scarfing, the lapping, the press work and the joining and converting of the stripe into belting. The entire exhibit was strictly typical of belting manufacture and, as far as this particular subject is concerned, was probably the best and most instructive presentation ever made to the public. Another exhibit which was handsomely and effectively installed contained examples of the hides from which belts are cut and examples of belting of various kinds; while another showed waterproofed leather belting. In this exhibit, by an ingenious arrangement of tank and pulleys, a belt was operated when partially submerged, and thus the impervious character of the belting was practically demonstrated. An exhibit of rubber belting and rubber goods contained superior examples of such products and included an interesting demonstration of the processes of manufacture. Exhibits of leather and chain belting were installed in the French section; while Germany presented an elaborate exhibit of leather belting which included a great variety of leathers suitable for belting and buffing and also for mechanical purposes. A feature was made in this exhibit of belts for transmitting power on other than a direct line.

Representative exhibits of pulleys were presented in the domestic section. One company installed a most complete exhibit of both wooden and metal pulleys, shafting, hangers, guards and transmission apparatus. This display was comprehensive and in the highest degree worthy, both in design, materials employed, workmanship and finish. This company also furnished the shafting, pulleys, hangers and mechanical transmission items used in the official machine shop of the Exposition. In other exhibits was shown an extensive variety of wood pulleys and of wrought metal pulleys in sizes ranging from six inches in diameter to forty-two inches in diameter. An important display in this class consisted of rolled steel sheared, pressed, trimmed and formed into pulleys of most excellent design and showing great care in construction and workmanship. In this exhibit was displayed examples of all pulley parts in detail together with methods of construction. A series of shaft pulleys and apparatus for rope transmission was shown; and a system of variable speed power transmission.

Transmission Machinery:

In the line of transmission machinery, the most important exhibits were those in operation in the Mining Gulch. In the palace of Machinery were installed several exhibits of this character in addition to displays of steel and iron ropes for drawing and hoisting. One illustrating wire rope transmission also included a miniature system of aerial tramways. Another operating exhibit demonstrated the methods of receiving coal, ore or other material, conveying them on rubber belts and delivering them at one or several points by means of movable trippers. The scales installed with this exhibit by another company demonstrated how such materials may be weighed automatically yet with accuracy. The total demonstration was very complete, and its details were most interesting and instructive.

In the class of weighing machinery an elaborate and comprehensive exhibit was made by a well-known scale manufacturing company which covered the entire range of such ma-

chines from most delicately adjusted laboratory scales to the heavy installations necessary for weighing wagons and care.

The exhibits of hoisting apparatus, lifts and blocks were highly representative of the great improvement in strength and facility of devices of this character. The cranes, hoists, blocks, also the automatic elevator in service have already been mentioned; these constituted a most representative illustrative exhibit. In addition, a number of other displays were presented in comprehensive individual installations which contained every variety, size and capacity of machine employed for moving heavy bodies, driven by steam, electricity and air, including cranes, hoists, chain hoists, lifts, freight and passenger elevators, conveyors. A ten-ton crane with grab bucket for handling iron ore shown in operation was an interesting item. The exhibits in this class embraced examples of wire rope and other auxiliary equipment and materials.

in the section occupied by machine tools one of the most extensive and important exhibits assembled by the department of Machinery was presented. This truly extraordinary display included all improved varieties of modern metal and woodworking machinery. Some of the installations in this group were among the most complete as well as attractive and effective ever presented at an exposition. In one exhibit was shown a truly remarkable line of machine tool equipment for work of the largest and heaviest character embracing devices of tremendous size and marvelous capacity. In this display were exhibited chiefly a variety of massive boring mills, planers and lathes. One of the mills installed occupied a floor space of 36x24 feet. Its vertical dimensions from top to bottom were 39 feet 8 inches. The housings weighed thirty-eight tons. It could handle work 20 feet in diameter and 16 feet high. The rating of its motor for the main drive, rear tool column and center boring bar was 30 hp, and the motor for elevating cross-rail and quick traverse was 10 hp. A display made of the highly perfected products of companies related to that which submitted this impressive installation included examples of steam hammers, taps, dies, reamers, millers, and small tools. The hammers were shown in operation. A feature was an assortment of newly designed turret lathes and machine tools.

An exhibit of planing and grinding machinery contained as a notable item a 96-inch planer electrically operated, the clutches actuated by compressed air and with a variable cutting speed but constant return.

Metal and Wood Working Machines:

The exhibit of bar and sheet metal working machinery embraced a number of comprehensive installations containing the latest improved examples of presses, dies, punching, shearing, bending, forming and welding machines. One display of this character presented examples of machinery the performance of which extended from the making of small bottle and can screw tops and the horning and wiring of bottles to pressed steel pinions for street car service and steel projectiles such as are used in the United States navy. A few of the machines were what may be termed standard but for the most part they were examples of new designs accomplishing novel processes and labor economies. The collection included presses, shears, punches, dies, forming hammers and automatic machinery for performing particular results in the working of sheet and bar metal. As indicated the range of work which this machinery was designed to accomplish was most extensive. It included all the ordinary operations of punching, drawing, reducing, trimming, shearing, seaming, can and pall making and for automatically rolling the screws on caps or shells, making wire rings, spinning, notching armature disks, drawing steel pinions and drawing and finishing projectiles. In woodworking machinery representative displays were made which well-illustrated the modern ways and means of performing the various operations requisite to transform timber into lumber and finished material ready for use. Among the more important installations of this class were four which were considered especially notable; one of these was a complete and handsomely installed exhibit of barrel and keg machinery; another was

an exhibit of box nailing machinery. A third was an elaborate exhibit of veneer cutting and drying machinery presenting examples of processes and products. The fourth was a large exhibit of woodworking machinery including a complete saw mill with steam feed carriage and various appliances and accessories. A heavy two saw trimmer, a forty-inch edger, and an assortment of inserted tooth saws were also shown. Another principal exhibit of machinery for the equipment of woodworking establishments included a full and superior line of machines covering the needs of plants of every size and variety from the forest saw mill through to the pattern shop and toy factory.

In the display in this section were included a variety of ingenious machines for sand papering wooden surfaces, also an exhibit of floor surfacing machines. Many important exhibits of abrasives and grinding machinery were offered, a number of which were installed in most elaborate as well as effective manner. In one of these displays was shown an extensive variety of abrasives in forms ready for use, from tiny dental wheels to one five feet in diameter and six inches thick. The abrasives were also shown in actual use, working and finishing iron, steel and brass, grinding stone, marble and glass and dressing skins. The exhibit included emery and alundum paper, cloth and rub stones, artificial India oil stones suitable for all the purposes for which sharpening stone is intended, also a general line of standard, floor, bench, tool and cutter grinders. In a companion exhibit was displayed a line of machines for accurately finishing plain or taper work revolving upon two dead centers. These grinders finish to within one four-thousandth of an inch from the theoretically exact. Another elaborate exhibit of this class embraced all varieties of carborundum crystals and the finished product in wheels, in powder and in emery papers and cloths. There were also examples of a variety of work performed with carborundum, notably of granite polishing. No exhibits in the palace of Machinery evidenced more thought or artistic refinement in the planning, the selection and arrangement of the objects to be shown, or the details of installation than these superior and complete installations of abrasives.

Automatic action and high speed as well as variable speed control were characteristic features of the remarkable machine tool display as well as the application of the latest devices such as ball bearings and particularly the extensive and highly developed application of electrical and pneumatic power.

Ingenious Installations:

The great attention given to the installation of exhibits in this section in order to combine effective presentation with attractive arrangement and setting was in striking evidence on all sides. A display of pipe wrenches and drop forgings afforded a notable illustration of the distinctly unique installations produced from materials seemingly so poorly adapted to attractive setting and alignment. This exhibit contained a handsome central pavilion and was enclosed by a unique fence or railing made of the materials exhibited. The upper panels of the central pavilion bore appropriate pictures of smiths at work; in the main panels beneath were assorted and graded examples of a great variety of drop forgings and wrenches. The entire pavilion revolved giving the added effect of motion. The railing surrounding the space, which was really a unique and admirable creation, was made of sections of chain pipe and other forgings between posts, each section being decorated by a number of broad panels covered with an assortment of drop forge specimens. This display was pronounced to be the handsomest exhibit of its kind ever seen. It was one of a score of similar excellence in the group.

In the general machine tool group Germany presented some most important exhibits, including superior examples of punching, shearing and stamping machinery; also of novel tool grinders, saw filling and gumming machinery, knives, files, rasps, measuring tools. The most distinguished installation in the German section was that of a great hydraulic press. This was, indeed, an extremely novel, interesting and expensive exhibit. The press was designed and patented by Carl Huber. Its purpose was the embossing of seamless hollow bod-

ies, forming the metal into irregular shapes by the direct use of water under a pressure of 90,000 pounds per square inch. Only one die - a female die - was used, and a male die is entirely dispensed with. The press was frequently operated with great success during the Exposition and the results produced were most novel and extraordinary.

France was represented by an exhibit of pressing, moulding and forming machinery, a metal sawing machine, files, hand tools for sharpening saws and other exhibits.

Representing Great Britain in this section an exhibit of machine tools was installed which included the following items: tools used with machines for countersinking and shaping, cutting tools for lathes, planers, shapers, boring mill and tapping machines, slotting, grooving, drilling, threading and milling machines.

In the section devoted to arsenal tools, a large number of interesting displays were installed. In the series were included tools for arsenal equipment and accessories, machine tools, abrasives, for finishing gun parts, ammunition machines, special tools used in the manufacture of arms, heavy ordnance lathes, projectile lathes, turret lathes, rifling and gun barrel drilling machines, profiling machines, machines for constructing wood parts of gun carriages. Two principal items of the display were a cartridge case drawing machine and a rifling machine of improved pattern and efficiency.

France was represented in this section by several exhibits of substances for oxidizing gun barrels.

Great Britain presented a display of arsenal tools and accessories.

Prominent journals devoted to power machinery and machine tools were represented in the exhibit of machinery by special displays. The editors and representatives of these journals studied at close range the great exhibit of both working and still machinery which was presented and gave report of its details, quality, and significance to the technical world.

Of the machinery exhibit as a whole, it may be said that the standard of excellence in the respective sections both in the palace of Machinery and in the Steam, Gas and Fuel building was very high - mediocrity had, indeed, little space in any part of the exhibit, which excited universally favorable comment. The leased power plant was regarded by many as the most distinguished presentation ever made by private interests at any exposition. It was not merely a collection of machinery; it was an aggregation that had been built and stripped clean for work-that stood supremely fit for the potential service it performed. Its setting was superb, artistic in conception, and with no expense spared in its execution.

Almost the same might be said of the imposing steam generator unit installed by the Allis-Chalmers-Bullock and Alberger Companies. Nothing like it had ever been seen at an exposition. The exhibit of machine tools, many of which were installed and regularly used in the working machine shop of the exhibits power plant, has never been before approached in extent, performing capacity and size of machines shown. The exhibits of pumps and pumping machinery, of piping, valve, gauge and steam specialties, of instruments of precision, of presses and sheet metal working machinery, of abrasives, of grinding machinery, of shafting, pulleys and transmission appliances and material, of hoisting apparatus and lifts, of barrel and keg-making machinery, box nailing machinery, veneer cutting and drying machinery, of processes in the manufacture of leather and rubber belting, of the development of gas power and gas engines well surpassed all previous illustrations in these directions. It is believed that never before in an exposition had power generation by a water wheel and dynamo operated by the force in water under high pressure been shown. Nor had any such notable example of size and power in hydraulic press work been offered as demonstrated in the exhibits made of that class of machinery.

CHAPTER VIII

ELECTRICITY

Press Messages by Wireless—Automatic Telephone Exchange—Single-Phase Alternating Current Motor—The Intramural Railway an Exhibit—Five Systems of Electrical Illumination—Thomas A. Edison's Co-operation—Electric Railway Tests—The Congress

THE present is freely designated the Electrical Age. The first years of this century have seen the birth and development of inventions which make a phenomenal array. The progress effected since the Chicago Exposition has been extraordinary. Wireless telegraphy was unthought of in 1893-by the public at least. It was among the principal exhibits at the Exposition of 1904. Between towers on the exposition grounds messages were transmitted. Press messages aggregating 5,000 words a day were sent from the main exposition station to newspaper offices in the city, a speed of 35 words a minute being obtained. Messages were repeatedly sent during the early part of the exposition period to Springfield, Illinois, 105 miles distant, and later to Chicago, 300 miles away.

The improvements in telephonic communication have universalized that medium since the period of the World's Columbian Exposition. The operation of rural telephone systems now of general adoption in the various states was illustrated at Chicago in its initial and comparatively experimental stages. In the palace of Electricity at St. Louis the automatic telephone exchange was installed in practical operation, while telephoning along a beam of light was a subject of daily marvel to visitors. There were displayed several devices for transmission of writing by wire. One of the wonders shown was a device to record a telephone message on a steel wire, the wire in turn being capable of repeating it sometime later through the telephone, so that a message could be received, recorded and read afterwards at the convenience of the person for whom it was intended.

The Single-Phase Motor:

The successful production of a single-phase alternating current motor constitutes one of the most important electrical developments of recent years. The possibilities for the application of electricity to broader fields of railway service opened up by this achievement are not easily realized. Considered in connection with the development of gas engines, the single-phase motor promises the beginning of a new era destined to see the passing of steam from many important fields of service. The alternating current motor is superseding the fuel locomotive in much important railway service in thickly populated sections; just as the

internal combustion gas engine, with its minimum heat and fuel consumption and its elimination of boilers, steam pumps, condensers, return traps and other steam plant auxiliaries and of the heat losses and leakage from such auxiliaries, is supplanting steam in many important branches of stationary engine service.

An exhibit in itself was the Intramural Railway of the Exposition operating over fifteen miles of track under the trolley system with model equipment of the latest type in every respect. This railway carried 6,274,000 passengers during the seven months of the Exposition without serious injury to a single passenger.

The distribution of power over long distances is one of the most important fields of usefulness for electricity. To do this economically very high potential currents are necessary. While ten years ago 10,000 volts was considered excessive, today lines of 50,000 volts potential are in commercial service. Even this is not the limit, for experiments are still being carried on and some of the most fruitful results will probably come from work begun at the Exposition of 1904.

Five Systems of Electric Light:

In all, five systems of electrical illumination have been developed since the Columbian Exposition. Two of these were brought to commercial perfection within a year of the Louisiana Purchase Exposition. These systems comprise the method of lighting by enclosed arc lamps, Bremer arc lamps, and magnetite arc lamps, as well as illumination by Nernst incandescent lamps and mercury vapor lamps. The enclosed arc lamps give a bluish white light; the Bremer arc lamp, a rich yellow light; the magnetite lamp, a very white light; the Nernst lamp, a yellow white light; and the mercury vapor lamp, a greenish white light. The layman visitor was given an interesting object lesson in the widely different effects of these lights by the exhibit of a piece of dry goods under four different forms of electric light. The illumination of the exposition palaces and grounds, notably the palace of Electricity which was brilliantly festooned with incandescent bulbs, was effected by systems of lighting highly improved over those in use at Chicago.

Every department of electrical activity was fully represented by the display assembled in the palace of Electricity. How far this modern medium has entered into the solution of material problems of our commercial and social life was illustrated on all sides. What it is about to do for us tomorrow was indicated in a hundred ways by practical device and demonstration. To more effectively exemplify the features of electrical performance and promise the palace of Electricity was kept open at night, also the palace of Machinery in the sections where electrical devices were installed.

Particular care was given to the preparation, collection and installation of the exhibits of Electricity. The importance of such a display was realized, especially its value as a suggestion and stimulus bearing upon further development. The classification provided to regulate the scope and items of the exhibit embraced every element, development, method and apparatus of electrical science and industry. Distinguished aid was sought and freely given in the organization and selection of the exhibits assembled, including the co-operation of Thomas A. Edison who acted as honorary chief consulting engineer of the department of Electricity, adding his great influence to the endeavors of the exposition management to properly emphasize the importance and progress of electricity in the world.

In actual direction of the operations of the department of Electricity and the collection, installation and conduct of the electrical exhibit was Winder Elwell Goldsborough, from whose report to Director of Exhibits Skiff the following review of the principal features is prepared:

The Palace of Electricity:

The exhibits of the department of Electricity, many of the heavier power items of which were installed in the palace of Machinery, were embraced under five principal groups, as follows: machines for generating and using electricity; electro-chemistry; electric lighting; telegraphy and telephony; and various applications of electricity. These main groups were divided into twenty-four separate classes covering every phase of electrical science and industry. The palace of Electricity was the largest ever provided by an exposition for an exhibit of electrical apparatus and the display of electrical phenomena. It covered virtually 300,000 square feet of ground space as against 250,000 square feet covered by the Electricity building at the Columbian Exposition at Chicago in 1893, and 75,000 square feet covered by the Electricity building at the Pan-American Exposition at Buffalo in 1901. It was of most graceful design and proportions, being an elaborate pentagon, each of the five facades of which presented a succession of splendid columns of richest Corinthian type. Two of the facades included balconies of rare grace and beauty. The building enclosed an open circular court surrounded by rich colonnades, which was well sodded and laid out in plots, with a large floral clock in the center electrically operated; ornamental trees bordered gracefully laid walks.

The location of the building within the exposition grounds was most favorable. It stood at the foot of the grand terrace and cascade hill and thus constituted a prominent feature of the beautiful section which was the focal point of the main picture of the Exposition. The north facades of the building measured 700 feet, which made its greater dimensions 625x700 feet. The eastern exposure fronted on the main avenue of the Exposition. This broad thoroughfare led up from the main entrance to the Grand Basin and the Cascades and was penetrated by the central lagoon. The southern exposure faced the Grand Basin and the Cascades, and was in direct view of the fountains, the Colonnade of States, Festival Hall and the Fine Arts palaces.

On the west and north the building was bordered by other avenues of the Exposition and other arms of the lagoon. It was, therefore, completely surrounded by water, being approached by ornamental arch bridges of handsome design.

Four important entrances led into the building, one imposing portal at the meeting of the two converging north facades and one at the center of each of the other sides. Graceful and ample entrances were also provided at the corners of the building. The doors were of splendid dimensions, 11x18 feet.

The architectural details of the building were exquisite and well executed in every respect. The columns supporting and adorning the sides were carried down close to the ground and gave height and effect to the facades. The facades were accentuated by elevated pediments and tower effects which arose over the four main entrances and at the corners. For variation a twin column treatment was provided at different intervals along the sides; and over these as well as over the elaborate entrances and corners every opportunity for sculptural decoration was artistically employed.

The fenestration of the building was bold, liberal and appropriate, giving ample light while affording substantial wall treatment. On two sides graceful and capacious loggias were extended which enhanced the general beauty of the facades, offering pleasing effects of light and shadow.

A fine scheme of direct and indirect illumination was applied to the building which made it even more beautiful by night than by day. Indeed, the illumination of the palace of

Electricity represented probably one of the greatest successes ever attained in the festooning of a large building with incandescent lamps. At the Columbian Exposition the principal buildings were outlined by a single row of lamps conforming to the general roof outline of the structure, with the exception of the dome of the Government building which carried an additional number of lamps. The palace of Electricity at St. Louis was encircled by no fewer than twelve distinct rows of lamps, in addition to numerous hidden lamps behind the columns. The beauty of this decoration at night was and will for many years remain unparalleled.

The interior of the building was, as far as possible under the conditions of its pentagonal form, well arranged. It practically consisted of a succession of broad halls encircling at easy angles the large central court - which while provided for variety, ornamentation and rest, was availed of also for exhibit purposes. All of the exhibit space in the building was on the ground floor with ample head room; in fact, over the center sections the roof was eighty feet above the floor. A gallery 22 feet wide by 260 feet in length along the north wall provided accommodations for offices for the department of Electricity, the jury, committees, and the exposition electricity club rooms.

Progress Features of Exhibits:

The wonderful modern electric power machines embraced in the exposition power plant in the palace of Machinery have already been described. Special exhibits showing in even more striking degree the great progress achieved since the Columbian Exposition were installed in the palace of Electricity where they were classified under the five groups indicated. A full-sized model of a 10,000 horse power hydro-turbo electric generator furnished a specific presentation to the public of the largest electric generator ever designed and built for the development of electric power.

The single-phase motors in operation in the palace of Electricity were the first ever exhibited in public. Two such motors were shown mounted and in operation on a truck, with induction regulators, a large auto transformer, air-operated switches, a master controller, and the usual air-brake equipment. To some engineers this was the most significant single electrical exhibit at the Exposition.

The mercury vapor rectifier which is an instrument for converting alternating into direct currents of electricity was an important exhibit. This is one of the most unique and valuable inventions of the recent past. By its use heavy and costly motor-generator sets can be dispensed with and a small glass bulb containing mercury substituted therefor. The mercury arc rectifier was shown in operation in a leading exhibit. It was adjusted to receive an alternating current which it converted into a direct current driving a $7\frac{1}{2}$ hp motor.

A transformer which raised the potential from 120 to 1,000,000 volts was exhibited in operation. It had a regulator in the primary circuit which made it possible to adjust the secondary potential between zero and 1,000,000 volts. A series of alternating current induction experiments was performed at frequent intervals with 2 and 60 cycle current. The transformer had a maximum capacity of 100 kW and was primarily intended for testing and laboratory purposes. This transformer was installed on the avenue in front of the main entrance of the palace of Electricity and the discharge terminals were placed on the bridge over the lagoon opposite this entrance. Experiments were conducted in the evening for the entertainment of the public, the discharges produced taking the form of electric flames forty-eight inches long, accompanied by a report to be heard a mile away. This apparatus produced phenomena radically in advance of anything previously shown.

A stretch of electric railway track, poles and wires north of the Transportation and Varied industries buildings constituted a model exhibit of these fixtures in working combinations and was especially equipped for making tests upon electric railway equipments

of both direct and alternating current types. Upon this track experiments were conducted by the Electric Railway Test Commission covering all varieties of electric railway apparatus shown at the Exposition. In addition, important wind resistance tests were carried out by this commission in Indiana. The results of these tests have been carefully compiled and published in a permanent volume which represents another important contribution of the Exposition to science and engineering.

The Mercury Lamps:

The commercial application of new systems of electrical illumination was profusely illustrated. A principal feature of the lighting exhibits was the display of mercury vapor tube lamps in the palace of Electricity. About two dozen tubes were also used for the illumination of the leased service plant and for a special demonstration in an exhibit auditorium in the palace of Machinery. Over this auditorium was placed a mercury vapor tube eight feet long. In the palace of Electricity, in the same company's exhibit, was a tube of similar size. The mercury vapor lamp was used by the company operating under the official photographic concession of the Exposition for portrait work in its booths on the Plaza, by the official pass photographers for all pass portraits taken on the grounds and in the postal photograph booths of the Tyrolean Alps. In the auditorium mentioned three exhibitions were given daily of an interesting series of biograph and mutoscope pictures of scenes in and around the exhibiting company's works in Pittsburgh, in which were included the first interior moving pictures ever taken. These pictures were obtained by means of the mercury vapor lamp and are the most striking demonstrations that have yet been made of the lamp's actinic efficiency. By its use it was possible to take pictures at a speed of 900 a minute, or 15 a second, in the blackest forge rooms and foundries.

A most striking illustration of the power and character of this remarkable new lamp was given on the top platform of the great wireless telegraph tower the dazzling greenish illumination of which by mercury vapor tube lights was strikingly visible from every point upon the exposition grounds constituting a distinctive feature of the unparalleled night panorama. It is asserted that actual tests have shown this lamp to be less fatiguing to the eyes than any other artificial light; that it is the most economical light, and that its absolutely even illumination makes it particularly pleasing to draftsmen, machinists and stenographers, and in all places where the question of color does not come into consideration. The mercury vapor tube lamp is simple in construction with no mechanism to get out of order and no carbons to strip or replace. The lamps were shown on exhibition as designed for use for general illumination, photography and photoengraving, with simple printing outfits for photographers. In many of the Pike shows the lamps were used for illumination in places where their peculiar greenish light afforded entertainment and amusement.

Another company exhibited the mercury vapor arc lamps which were shown for the first time at an exposition; also the new arc lamp using magnetite instead of carbon. This lamp shows a very marked increase in efficiency over the carbon burning lamps and is especially suitable for street lighting. In the entire system of arc lighting used by the Exposition, developed since the World's Fair at Chicago and known as the series alternating street lighting system, the enclosed arc lamps were used. The system was employed in lighting the interiors of buildings, the outlying parts of the grounds and the Pike.

Bremer and Nernst Lamps:

The essential point of the Bremer arc lamp is that instead of the ordinary carbon it employs a special kind impregnated with certain chemicals containing fluorspar and compounds of calcium and strontium. According to tests made by Prof. Wedding, of Germany, this lamp consumes 0.4 to 0.6 watts per candle power, which means that it is about three times more economical than the ordinary arc lamp and many times superior to the incan-

descent. The color given to the light by the admixture of the chemicals makes it softer and more agreeable to the eye, and it is consequently very effective for decorative lighting. In construction the Bremer lamp differs from the ordinary type. The carbons are brought together from above at an angle of about twenty degrees, and on the upper aide of the arc is a magnet the function of which is to blow the arc downward and thus make it more effective. The lamp is successfully made for both direct and alternating current.

The first public exhibition of Nernst lamps in any considerable number was at the Pan-American Exposition in 1901. Today the new lamp is an important feature in the lighting of an exposition. The most important installation of Nernst lamps was in the Fine Arts palaces, where over 6,000 glowers were used. For this purpose the pure white light of the Nernst lamp has effectively solved the problem of the illumination of works of art. Important exhibits in the palaces of Electricity, Machinery and Transportation were all brilliantly lighted by the Nernst lamp, and special demonstrations of its strength were given dally in the palace of Machinery by comparing it with incandescent light globes. The handsome Illinois state building was lighted by Nernst lamps, and they were also employed in other exhibits. In all, over 2,500 Nernst lamps were in use on the exposition grounds. The peculiar advantages claimed for the Nernst lamps may be summarized briefly as high efficiency, beautiful quality and perfect distribution of light, absence of shadows of the lamp itself, steadiness, and the fact that the glassware is removable for cleaning as a vacuum is not employed in the lamp. It is but slightly affected in candle power by variations in the line voltage and is free from noticeable pulsations, even on alternating circuits of low frequency.

An incandescent lamp factory in which about 2,000 incandescent lamps were manufactured each day was one of the most attractive and most comprehensive of the working industrial exhibits shown on the exposition grounds. This exhibit which was very carefully installed was located in the southwest corner of the palace of Electricity. In its various sections could be seen all of the intricate and heretofore secret processes in the manufacture of an incandescent lamp. The work was carried on in such a manner that starting with the squirting of the filament the visitor could see, by walking entirely around the exhibit, each stage of manufacture in the proper order. The exhibit attracted much attention.

Wireless telegraphy was illustrated on a scale far surpassing any previous attempt. Extensive exhibits were installed in the Electricity and Government buildings in addition to a great outdoor tower. An immense mast for sending commercial messages to Springfield, Chicago and Kansas City was erected. Three systems of wireless telegraphy were represented at the Exposition. The perfection to which the service of one of the systems had been brought, that represented by extensive practical operating exhibits, was attested by a special committee of the international jury of awards appointed to investigate the work. In addition to the other practical service above indicated two afternoon newspapers of St. Louis were supplied with exposition news by this system. The main operating station in the space occupied by this display in the palace of Electricity was a center of interest. The great observation tower was a steel structure 300 feet high. Besides being equipped with a complete wireless telegraph installation it was provided with electric express elevators by means of which visitors could ascend to platforms above where the apparatus could be examined and demonstrations witnessed, and from which an incomparable view of the Exposition and St. Louis could be obtained. The great wireless telegraph mast which formed an important part of the high-power, long distance transmitting and receiving station of the company, consisted of a single mast 200 feet high with a 60-foot outrigger at the top from which hung the aerial wires. The exhibit as a whole was very important, extensive and splendidly equipped, constituting possibly the most novel and attractive single feature upon the exposition grounds.

The exhibit of a radiophone transmitting and receiving station (wireless telephony) made jointly by two companies proved to be one of the more attractive exhibits in the palace of Electricity. The radiophone is a combination of an arc light, reflectors, and a selenium cell. By these means speech is transmitted to distant points without the use of wires or other

such intervening medium, the translation taking place along a beam of light furnished by the arc, and projected into a parabolic reflector.

Acousticon and Massacon:

Two interesting devices known as the "acousticon" and the "massacon" were presented in practical service, giving daily exhibitions of deaf mutes being made to hear and taught to speak through the use of these electro-telephonic instruments. Interesting demonstrations of an adaptation of the wireless telephone were also conducted in connection with this exhibit. Around the court of the palace of Electricity was placed a circuit of wires connected to a booth in the building. Before a telephone transmitter in the booth music was played. In the court no sound of this was heard until a pocket telephone receiver without any wire connection was placed to the ear, when the music became audible. At any point in the court this music could be heard with the aid of a receiver.

In the transmission of intelligence, the automatic telephone deserves special mention as in its perfect form it had only been exhibited on a large scale at the Exposition of 1904. The operation of this device attracted a great deal of attention and admiration on account of the perfect manner in which telephone calls were automatically executed.

The telautograph was exhibited at the Chicago Exposition. The device shown at St. Louis, however, was radically different and so much improved as to represent virtually a new invention for the transmission of written messages, an exact reproduction of the handwriting of the sender at the sending station being recorded at the distant receiving station.

The later devices and products of electro-chemistry were reflected in a number of exhibits, chiefly by that of Germany which is described elsewhere. In the court of the palace of Electricity a process of purifying water by electricity for commercial purposes was exemplified. The electric purifier shown had a capacity of 600 gallons of purified water per hour, the power consumption being 16 amperes at 16 volts.

A 60-inch spark coil, the most powerful of the kind in the world, was a feature of a series of exhibits illustrative of the great and growing part electricity has essayed and is performing on modern medicine and surgery.

In Festival Hall the perfect electrical operation and control of the greatest organ in the world exemplified the widening of the field of electrical accomplishment to include the increasingly complex tasks of the world as well as those of coarser needs illustrated by the electrically operated fuel conveyor system in the Steam, Gas and Fuel building.

This extension of the functions of electricity was apparent in all of the exposition palaces and in all parts of the exposition grounds. The cars which carried visitors to and from the Exposition were equipped with electric motors; the automobiles in which visitors toured the grounds were electrically driven. At scheduled hours throughout the day and evening when the beautiful cascades were in operation guides informed their charges that the pumps were driven by 2,000 horse power induction motors - "the largest in the world." The giant turn-table in the center of the palace of Transportation was revolved by an electric motor, and the big locomotive mounted thereon had its drive wheels turned at the rate of thirty miles an hour by electric power. The locomotive testing laboratory in the same palace was equipped with electrical auxiliaries for facilitating the working tests on locomotives. In the outdoor mining exhibit located in the gulch south of the Mines and Metallurgy building was an electric mine railway; also electrically worked mines, stamp mills, concentrators.

The Variety of Telephones:

In the palace of Electricity were the main offices of the telegraph companies through which the news was sent from the Exposition. Automatic and high-speed telegraph systems were shown in operation; also a transmitting typewriter applied to telegraph work. Two

telephone operating exchanges were located in the south side of the building, both enclosed by handsome booths, making instructive and interesting exhibits. This telephone exhibit was very complete, embracing all varieties of private and public line systems and a number of complete automatic telephone exchanges of different types in operation. Many varieties of magnetic and central energy telephones (wall, desk and portable), switchboards, annunciators, arresters, hygienic devices, and measuring devices for toll service were presented.

An interesting feature of the electrical exhibit was the substation that contained the transformers, switchboards and rotary converters through which the high potential alternating current was received from the service power plant and transformed to a lower voltage or converted into direct current for distribution through the building. Many other transformers of the latest types were also shown. A noticeable exhibit in this section was an electric dumb waiter running from the floor to the roof of the building. Its operation was automatic, starting and stopping in response to a push button.

Interesting working exhibits were presented. One of these consisted of a line of direct-current machinery, transformers, fan motors, watt meters and a series arc-light system; another of a variety of single-phase alternating current power-motors running under different conditions, motor-generator sets charging a storage battery, static transformers and indicating switchboard instruments.

Varied and complete demonstrations of the adaptation of the electric motor to many forms of industrial machines were made. In one display of this nature the manufacturing of motor parts was carried on to show the convenience and increased efficiency of motor drive for tools; in another was a variety of machine tools driven by motors embodied in machines. The exhibits of dynamos and motors were numerous and covered every size and variety, representing application to service of every nature and degree of energy from the great turbine down to the operation of miniature industrial machines.

Items representing the adaptation of the latest invention and device for the construction and maintenance of lighting and power plants, electric railways and telephone exchanges-generators, motors, transformers in service-were presented in an attractive collective exhibit. A large synchronous motor driving a modern generator supplied power for the apparatus in operation in this exhibit. Dry batteries, insulators, insulating tapes, fuses, switches, meters, anchors, detectors, circuit breakers, flexible conduit, secondary generators-in practical operation as a substitute for dry batteries in ringing bells, opening doors and for annunciator and telephone switchboard work-desk, wall and ceiling fans, drills, various types of arc and incandescent lamps, and headlights were shown. Another collective exhibit included a number of direct current motors of from $1\frac{1}{4}$ to 35 hp, and a 30 kW three bearing generator direct connected to a gas engine in operation; also an interesting display of arc lamps and electric fans.

The exhibit of electric railway equipment was the most complete ever made and included, besides the many important items elsewhere mentioned, comprehensive exhibits of electric railway overhead supplies and a system of block signaling for single track trolley roads.

Many and elaborate were the displays of electric lighting and auxiliary apparatus. One exhibit of this kind was made attractive by the illumination of 2,500 lamps 600 or which were colored. All varieties of electric lamp novelties and settings, brass, bronze and art glass electroliers were shown. The display included reflectors, flashes, wireless clusters, sockets; a series of "hylo" and winking lamps, special forms of turn down incandescent lamps; sunbeam incandescent lamps; portable electric lights of small candle power operated by concealed primary batteries; primary batteries and miniature electric lamps arranged in combination for various household and ornamental purposes; arc lamps for constant potential, direct and alternating current circuits; devices for producing novel and changing effects in electrical illumination-letters, signs, figures- also of increasing the illuminating power of lights; an interesting and artistic exhibit of illuminating signs; a complete electric train lighting equipment.

The exhibits of electric fans were of extraordinary variety; all types—desk, wall, bracket, ceiling, suspensions were presented, including many new and attractive designs. Several exhibits were made of electric heating appliances and apparatus, chafing dishes, teapots, flat irons, electrically heated enameled dental furnaces and an improved electric cooking range. A unique and comprehensive working exhibit of cooking by electricity (in a public restaurant) attracted much attention, as did an electrically heated and propelled device for making candy.

The western entrance to the palace embraced two large spaces which were occupied by unique exhibits. In one were shown stereopticons, lanterns, projectors and automatic electric curtain hoists in operation. Opposite was an electro-plating exhibit in which the different processes of plating and finishing plated wares were shown in a most attractive manner.

An interesting combination exhibit included a large number of cells, an automatic booster, motor-generator sets and rotary transformers, arranged so that many ingenious applications of storage batteries to different lines of work could be illustrated. A special item was a motor-driven unipolar dynamo charging two immense cells with 3,000 to 6,000 amperes at about five volts. A model central station storage battery plant in a fire and acid-proof enclosure was the principal feature of another attractive exhibit. Exhibits of storage batteries were made, in one of which was a model battery house containing a model regulating railway battery operating on a variable load. A group of Gladstone-Lalande batteries was presented; also a variety of apparatus for applications of electro-magnetic control in the handling of industrial supplies and machine tools, including magnetic friction brakes, solenoids, lifting magnets and a direct connected planer drive. A novel collection of electrically driven toys attracted attention.

Various types of graphite electrodes were exhibited, and especially some continuous working forms of electrodes and anodes designed especially to do away with waste of the electrode material; several displays were made of carbon and porcelain products and other auxiliary electrical material and appliances. There was also an exhibit of alundum wheels, paper, cloth, grains and powder for polishing and grinding.

The displays in the electro-therapeutic group were numerous and representative, embracing many types of static machines and a variety of X-ray apparatus, cabinets, coils, tubes, resonators, rheostats, transformers, interrupters, including the 60-inch spark coil already mentioned. Germany exhibited a fine line of spark coils though nothing equal to this one. The exhibit altogether embraced a remarkable variety of all of the latest devices for the perfection of treatment through X-ray, ultra violet rays, high frequency discharges.

Representative exhibits of cables and conduits were offered including a model conduit such as is used in the best city construction, showing method of placing cables in conduits; flexible conduits; and an illustration of conduit laying. An insulating coupling for water and gas pipe underground was shown. The cable display included various types of underground, aerial and submarine conductors, also historical specimens, cable laying apparatus.

Among other features of the electrical exhibit were: a large variety of electric clocks including one of new and distinct type which operates without springs or weights, consequently with no frictional loss, and an elaborate exhibit of secondary electric clocks; an entirely new line of cash registers electrically equipped in such a manner as to operate automatically; a very fine display of modern automatic fire alarm apparatus in working operation with skilled attendant giving demonstrations; detective signaling apparatus; time detectors; fire alarm boxes. Automatic time switches, insulators for low and high tension service, magnetic separators, magnetic cut meters, dynamo gas engine igniters, permanent magnet gas engine igniters and alternating current gas engine igniters were shown in variety; also many types of fuses, fuse blocks, fuse boxes, high and low potential cut-outs, lightning arresters and conductors, electric controllers, reloadable plug fuses and other forms. Scientific devices for testing and investigation, measuring and research apparatus, instruments for recording fluctuations in current voltage, and an interesting exhibit of various electrical fittings and appliances which from detective construction or insulation had

caused electric burnouts, fires resulting in some cases, were important items of the display.

Plans, specifications and photographs of interesting electric installations were presented; also a variety of engineering periodicals, engineering and technical books, and miscellaneous historical publications. In the court of the palace of Electricity there was installed a narrow gauge industrial railway upon which was regularly operated a storage battery electric industrial locomotive and trailers.

The Largest Exhibit:

The largest individual exhibit in the palace of Electricity was installed by one of the leading electrical manufacturing companies and covered a quarter of an acre of floor apace. A great variety of the electrical apparatus manufactured by this company was shown in operation. The most striking feature of this exhibit was a full sized model of the 10,000 hp vertical shaft generator to which reference has been made and which was built for the great Canadian power plant at Niagara Falls. Inside this model which represented the stationary armature of the machine resting on a concrete base was a small circular room in which were displayed photographs of the Niagara Falls electrical installations of the company. This room also served to show lighting effects with the three different types of lamps offered by this company, namely the "meridian" incandescent with prismatic reflector, the enclosed arc with concentric diffuser, and the orthochrome mercury vapor arc lamp which is a lamp combining the light of the mercury vapor arc and incandescent filament in one lamp. The central tower of the exhibit was surrounded by a circle of the Steinmets mercury vapor arc lamp-tubes 16 inches long by one inch in diameter; the whole making a remarkable lighting exhibit. In the railway portion of the exhibit a multiple unit train control system as perfected for the Interborough Rapid Transit Company of New York was shown; also five different types of railway controllers; and a straight air brake system for electric cars, exhibited for the first time. A 7-ton mining locomotive was equipped with a cable reel which operated automatically as the locomotive advanced or retreated, permitting it to run into new portions of mine where trolley wires were not yet installed. One of the largest oil switches ever constructed was shown in this exhibit, capable of breaking a 60,000-volt circuit; also a 2,333 kW transformer bunt to operate with a 2,300 volt low-tension, and 65,000 volt high-tension voltage. The principle of air-cooled transformers was illustrated by exhibits. The application of induction motors to cotton mill driving was illustrated by a 100 hp Induction motor suspended overhead and belted to four lines of shafting, two belts being run from each end of the motor shaft. In connection with this was an improved starting switch with a curve drawing watt meter. The application of electric motors to hoisting was shown by a double drum machine hoist electric motor and controller. A great number of small motor applications were shown including a 24-inch electrically operated valve, a centrifugal sugar-drying outfit with direct-connected vertical shaft motor, a portable drilling outfit with flexible shaft, alternating and direct current sewing machine motors, electric motors, electric coffee grinder, electric buffing and grinding machines, electric meat chopper, horse-clipping and grooming machine, force blower, job printing press, automatic envelope printing machine and a regular drill press. Voltage regulators were in operation with loads which could be varied. An 18-inch searchlight electrically controlled from the main floor surmounted the tower of the office booth in the middle of the exhibit. The latest supplies of the company in wiring, lamp sockets, insulators, cabinet panels, with all of its classes of small work, were shown. An apparatus whereby a large number of condensers were charged in parallel and discharged in series so as to give one million volts was set up to be used in testing lightning arresters with a discharge similar to lightning discharge. Typical railway and lighting switchboards of several types were used in operating apparatus in this exhibit. A mercury vapor rectifier previously mentioned with a capacity of 10-amp direct current was shown side by side with a motor-generator set for doing the same work, the cost of which is double that of a mercury vapor rectifier. In one corner of the exhibit was

a "tub" transformer with case removed showing the exhibiting company's series alternating arc system in practical detail. In connection with the arc lamps the concentric diffuser was of course shown, and also a new white ceiling of metal for use with arc lamps to improve the general illumination. The exhibit of measuring instruments included in this display was especially interesting as a number of this company's new curve-drawing watt meters and volt meters were shown as well as the regular indicating instruments. A Thomson high-torque induction recording watt meter was connected with a bank of lamps to show its operation on from one to sixty-four candle power lamps. The Thomson prepayment watt meter was shown as well as the new designs of Thomson recording watt meter in different capacities. The important exhibits made by this company in service in the palace of Machinery have already been described.

Railway Motors:

While its single-phase motor exhibit was possibly the most significant feature, it constituted but a small part of the display of electrical apparatus made by another of the great electrical equipment manufacturing companies in the palace of Electricity. Dynamos and motors of all types, rotary converters, static transformers, electric locomotives, switchboards and controlling apparatus, electrical instruments of all kinds, ground detectors, lightning arresters, circuit breakers, switches, fuses, incandescent lamps, arc lamps, Nernst lamps, Cooper Hewitt lamps, and new electrical hardware were shown in service in the comprehensive exhibit of this company. A large section of this space was devoted to railway motors and to railway controllers of various types. A specimen of the type of motor developed for the New York subway, having a capacity of 200 horse power, was shown open and in connection with a double equipment of a truck used in the demonstration of the exhibiting company's unit switch system of multiple control. Other important types of direct current railway motors shown were one first constructed for the Brooklyn Rapid Transit system, rated at 150 horsepower; one designed for elevated railroad or interurban service, rated at 110 horsepower; one for city service, rated at 40 horsepower; a motor manufactured especially for St. Louis service, having a capacity of 40 horsepower; a small city type motor rated at 76 horsepower, and one rated at 35 horsepower. Many engineers who saw the unit switch system of multiple control exhibited by this company in operation in the palace of Electricity had never before had an opportunity to study the operation of this important feature of modern electric train control. The examples of generators shown in this display included three sizes of the new type of self-contained alternating current polyphase generators all two-phase and wound for 2,200 volts, 7,200 alternations. In addition to the display of railway motors, a large number of motors for general industrial purposes were shown, including direct current motors of from 2 hp to 75 hp, both open and enclosed, arranged for horizontal and vertical shafts, and for mounting on floors, walls and ceilings. Two sets of wholly enclosed motors designed especially for crane hoisting or similar service were also shown in operation. The series of alternating current induction motors presented included a large number of the standard form, together with types developed for special service and conditions. The application of its motors in the operation of apparatus on exhibition, or in service in the main exposition buildings, and in various parts of the grounds was an important feature of the participation of this company. The exhibit of motor driven machine tools was one of the most important sections of its display, many of the tools being the largest items in their class on exhibition. Thirteen machines formed a part of this exhibit in the palace of Machinery and four were in operation in the palace of Electricity. The most notable feature of these machine tool exhibits was the adaptation of the tools for electricity motor drive, many being designed with the idea that the motor could supply a speed variation through an extremely wide range, and the absence of gears and speed changing devices was most noticeable. The machines were for the most part driven by individual motors directly coupled to the operating tool shaft in a few instances, but in the great majority

silent chains or gears were used. A distinguished item in this company's representation was the 600 hp steam turbine in the power plant, which ran continuously from 8:20 o'clock on the morning of June 20th to the morning after the close of the Exposition, driving an electric generator day and night at the remarkable speed of 3,600 revolutions a minute for a total of 3,962 hours, a record-breaking performance. This turbine was formally stopped and opened for inspection at 11:32 o'clock on the morning of December 2nd and was found to be in perfect condition, even the bearings showing the tool marks as when they left the factory. There have been instances on record of continuous runs of about the same length of time but the remarkable feature of the test was the maintenance, under load, of the speed of 3,600 revolutions a minute-corresponding to a peripheral speed of about 7,000 miles every twenty-four hours, or about one-fourth as fast as the earth revolves. The exhibit of rotary converters included in this display was one of the gathering points for engineers in the palace of Electricity and included two machines of 300 kilowatts capacity each. They were of standard construction and supplied current for demonstration purposes. Reference has already been made to the brilliant illumination of the several installations of this extraordinary exhibit by Nernst and mercury vapor tube lamps. A showcase display of incandescent lamps embraced all important commercial forms and sizes and many lamps of special design for exhibition purposes. Alternating series arc lamps manufactured by the company were suspended over the exhibit space in one part of which was placed all the necessary auxiliary apparatus required for their operation and regulation.

The Testing Laboratory:

Important exhibits were made by many other principal electrical concerns in the palace of Electricity, one of which occupied an entire block of exhibit space. In the southern half of this block were presented three high tension transformers and a large 600-volt rotary converter; a large 600-volt motor generator, generating 60 cycle alternating current; two street railway trucks equipped with motors, a single phase alternator; and several direct current motors, together with a large oak testing table. All of the machinery enumerated was wired up as a testing laboratory, the rotary converter being operated from the transformers which in turn derived their energy from the company's 3,500 kW generator in the palace of Machinery. From the rotary converter the motor generator or the street railway motors could be operated. In the general apparatus exhibited were embodied many novel features of electrical and mechanical design, including a complete line of a type of motors designed and constructed to meet the demand for machines of small capacity and for hard continuous electric drive service. The practical operation of the multiple voltage system of the exhibiting company was shown by a complete outfit. This included the main generator furnishing current at 260 volts and a balancer which split the voltage into 90 and 160 volts. An engine lathe, a milling machine, a boring mill and a shaper, all direct driven by a special type motor were operated by this set. The outfit makes three fundamental motor speeds possible, but by the proper insertion of shunt field resistance twelve speeds are obtained in the forward direction and nine in the reverse. The type of controller used in connection with the system is so constructed that a careless operator cannot stop the handle between voltages. The motors were supplied with open metal covers making a perfect fit and rendering them particularly adaptable for location in dirty, damp or dusty places. The alternating current generators on exhibition ranged in size from 60 to 3,500 kW capacity. The design of the 100-kW synchronous motor generator set exhibited was a singularly successful one. The set was provided with an oscillator which prevents the formation of grooves on the commutator, thus greatly prolonging its life. The oscillating also insures cool operation of the bearings.

Motor Driven Tools:

One of the most interesting exhibits of electrical apparatus was made by a western company. Its space was divided by aisles into five parts, in each one of which apparatus pertaining to some particular branch of the lighting or power business was shown. In the center was a large motor generator which took current from the 600-volt power circuit of the Exposition Company, the generator delivering current of 220 volts to the distributing switchboard located nearby. The set operated in conjunction with a compensator so that current of 110 and 220 volts was available for distribution with the result that from this unit power motors, fan motors, arc and incandescent lamps of 110 and 220 volts were operated in different parts of the space. Some of the advantages derived from, an installation of this character were shown in a striking manner in the section of this exhibit occupied by motor driven machine tools. Here, aside from furnishing the light, current of 110 and 220 volts from the motor generator was used to operate a series of variable speed motors direct connected to machine tools of different kinds. The company's system of variable speed motors shown here was a somewhat recent and very important development, and one of the chief points of attraction in this exhibit. For machine tools requiring a great speed variation a special motor controller in active operation on shaper and engine lathe was shown, which aside from all modern improvements contained a special reversing attachment, enabling attendant to secure the same number of speeds in the reverse as are obtained in the forward direction; also every safeguard to prevent accidents or damage to the electrical apparatus through carelessness or unfamiliarity. The electrically controlled machine tool appliances in this exhibit included one 24-inch back geared shaper; one 26-inch extension base shaper; one 24-inch plane milling machine; one 22-inch upright drill; one 30x30x8-inch planer; one No. 1 radial drill, and one 12x48-inch gear cutter. The exhibit also contained several motor grinders and buffers. Adaptations of motor drive to sewing machines and fans were also illustrated, and a large display of unconnected back gear small and large motors, supplemented by a marine generator set and complete switch board installations, was shown. One of the most complete items of this exhibit consisted of the display of a new type alternating current arc lamp regulator based on the principle of magnetic repulsion. There were several direct connected marine sets, transformers and regulating apparatus, also a series of alternating arc light equipment with ornamental lamps and stands in this installation. Items installed in service in the power plant have already been noted.

The exhibit made by another company contained a large direct current railway generator in addition to a number of other direct current generators driven by motors as well as alternating current generators driven by motors. The portable and stationary air compressing and braking equipments, electrically operated and controlled, which are manufactured by this company were also shown. These outfits were installed to be operated at short notice, and in fact by an automatic attachment an air brake set, designed for the control of brakes on electric trains was made continuously operative. When the pressure in the tanks reached a certain point, the current was automatically shut off from the equipment. As soon, however, as by leakage the compression had fallen below a certain point, the compressors would again start up. In addition to these items this exhibit also included a series of armatures in various stages of completion, which illustrated very creditably the method of manufacture; and the items in service in the palace of Machinery previously mentioned.

An effective display of prismatic globes which practically doubled the brilliancy of the enclosed light constituted one of the novel and material attractions of the palace of Electricity. The brilliant illumination of this exhibit was most conspicuous as 1,000 incandescent lamps covered the exterior and interior of the handsome structure in which it was installed.

National Bureau of Standards:

The laboratories of the national bureau of standards, covering a space of 23 by 200 feet, contained over \$50,000 worth of instruments for testing every kind of electrical machine and apparatus. About twenty government experts were connected with these laboratories to conduct tests and investigations. No preceding exposition has ever had such facilities for making complete records or for assisting the juries in making their awards.

Of especial interest was a retrospective exhibit of Edisonia. This unique and highly valuable historical collection embraced the pioneer installation of commercial electric lighting by incandescent lamps originally employed on the steamship Columbia plying between San Francisco and Portland, Oregon; Edison's first electrical locomotive and trailer; the first three-wire installation; Edison's first direct-connected steam-driven electric generator, "Jumbo;" original underground junction boxes; first electrolier ever made, with original incandescent lamps; model of Pearl street station, New York City; collection of electrical antiques; old type Edison chemical meter; collection of early electrical apparatus; old style Edison automatic voltage regulator; original manuscript, data, sketches, designs, calculations connected with the introduction of incandescent electric light; Edison disc dynamo; photographs of early work of Edison plants, equipment and a historical collection of incandescent lamps. In this section was also an exhibit of the storage battery recently invented and developed by Edison. The reception room of this exhibit contained the latest portrait of Edison, a bronze bust of him and a painting of his birthplace at Milan, Ohio.

A craneway with a span of 57 feet, 6½ inches, bearing a four-motor, 30-ton electric traveling crane in service was the principal item of an exhibit of electric hoists and controllers installed by a Milwaukee company. A 20 hp, 1,220-volt motor gave the crane a horizontal speed of 250 feet per minute; an 8 hp motor gave a trolley transverse speed of 150 feet. The main hoist was equipped with a 30 hp motor with a speed of 26 feet, and the auxiliary hoist with a 15 hp motor, which gave it a travel of from 30 to 90 feet per minute. The crane proved very serviceable in the installation of exhibits and was used in handling heavy machinery when exhibits were dismantled. With one exception the heavy exhibits were installed under or adjoining this craneway.

The Argentine exhibit in the palace of Electricity included telegraph instruments, carbon products and lightning arresters. There were also maps and diagrams showing the development of the telegraph and telephone systems.

In the Belgian national pavilion were some very artistic electroliers and an exhibit of storage batteries, telegraph and telephone apparatus, and a large collection of photographs of electrical work in Belgium.

Brazil's exhibit was devoted largely to the telegraph and telephone systems as well as the fire alarm systems used by the Brazilian government. Insulators and telegraph and telephone apparatus were also shown.

The exhibit of Canada included a fine model of the great electro-hydraulic plant now building on the Canadian side of the Niagara Falls.

The principal exhibit from Denmark consisted of primary batteries, an extensive display of which was made.

French Electrical Apparatus:

The French display of electrical apparatus occupied the largest area allotted to a foreign country, and in this section were found some interesting examples of French practice in electrical engineering, many of which are entirely at variance with American ideas and customs. On account of the high protective tariff, few French manufacturers of heavy electrical machinery ventured to send displays of this character although some few examples were of more than ordinary interest as representing modern French ideas in the electrical field. The principal of these was the 1,000 hp direct connected unit of the Societe Alsaci-

enne de Constructions Mechaniques, installed in the palace of Machinery as a portion of the exhibitor's power plant. The exhibit of this company in the palace of Electricity contained a large collection of photographs showing the most important installations made and, in addition, three ingenious electrical mechanisms including a remarkable three-phase reversible booster of the induction type, arranged for the distant control of the voltage of a system, one important result of which was the ability to raise or lower the pressure at a given point by infinitesimal steps. The French section also included an excellent display consisting chiefly of electrically operated machine tools, grinders, buffers, a milling machine, a blower, and various types of variable speed direct current motors for use in driving tools. A representative line of measuring instruments, switches, rheostats and lamps was also shown in this display, and surmounting a case in the middle of the exhibit was the first dynamo built by Zenobe Gramme in 1869 and presented by him to the institute of France. Comparing these electric machines with those of American manufacture it is interesting to note that nearly all of the Gramme machines were of the bi-polar type with the old-style Gramme armature and windings, although some of the motors were of the more modern multi-polar enclosed type. The transformers shown in this exhibit exemplified the European practice of building three-phase transformers, and even those for single phase differ widely from domestic lines. The exhibit also included several cells of a storage battery. Two installations that attracted a great deal of attention consisted of displays of the beautiful electroliers for which the French designers are famous. All of the pieces were of graceful design and exquisite workmanship. One of more than ordinary interest represented three monkeys playing with bubbles, the latter being large globes of iridescent glass containing incandescent glass. The sculptor Meliodon is responsible for this clever conception. In the booth with this piece was also shown a frieze of brass electroliers resembling a peculiar vine the flowers of which hung in grape-like clusters. Within each cluster was a miniature incandescent lamp. The design of the moulding, wall and ceiling of the booth was skillfully carried out to harmonize with the vine motif, producing a most exquisite effect. An interesting display of the new "electric pearl" system of lighting devised by Weismann was also made, and a second installation of this beautiful novelty was shown in the French costume exhibit in the Manufactures building. A number of exhibits of wire cable were made, one containing a large collection of cables, and a sample of characteristic pole line construction; in another were presented some sections taken from cable damaged by the volcanic eruption at Martinique. In an exhibit of carbon, some carbon blocks, fully five feet long and a foot square - considerably larger than anything shown by domestic exhibitors-were presented. An exhibit of batteries of the carbon-zinc-salamoniatic type, adapted to automobile and launch service, motorcycles and general open circuit work attracted attention. A storage battery was exhibited which possesses several interesting features and which is meeting a ready market in France on account of low cost and high efficiency. While the use of negative electrodes of mixed oxides is not unusual, still this is not the case with the positive electrodes of the same type as used in this battery although such a formation is superior, both as regards capacity and cost of manufacture, the chief objection being the inevitable breaking away of the active matter. This liability to fall apart has been overcome by means of a chemical process in the battery exhibited. An automatic self-restoring fuse, although a small item, was of interest. It consists of a small tube of inflammable material, filled with mercury and having a capillary perforation. When, due to a higher current or pressure the mercury is forced apart by the formation of an arc, the simple pressure of the thumb on a small rubber bulb restores the fuse to its original state. A rather striking exhibit was made up of small electrical apparatus such as switches, rosettes, insulators, fuse blocks, mounted on a large panel. Altogether there were nearly one hundred exhibitors in the French section, representing the best manufacturers of that country.

Germany's Sixty Exhibitors:

The exhibit of Germany in the palace of Electricity covered 16,745 square feet. In all there were about sixty exhibitors comprising the largest electrical manufacturers and most prominent savants and engineers. The electrical exhibits were collected under the direction of the German ministry for schools and education, with the assistance of the German society for optics and mechanics, and the organization of the section for scientific instruments was in the hands of Prof. Dr. Lindeck, of Berlin. The electrochemical section was brought together by Prof. Dr. Harries, of Charlottenburg, and Prof. Dr. Nernst, of Gottingen. The main effort was centered on the attempt to show the development in electro-chemistry, in which branch Germany is the acknowledged leader. In the field of electric transportation, a collection of pictures of the electric high-speed equipment upon which the classic Berlin-Zossen tests were made was presented accompanied by a copy of the report of these tests in all details. The "Lengen" monorail suspended electric railway system, as applied between Barmen and Elberfeld and projected for the city railways of Berlin, Hamburg and London, was represented by twenty fine photographs and many detail drawings showing the striking features of this new system. An ingenious instrument for finding the resistance of rail joints and bonds was exhibited. Although it did not give the result direct in ohms, it furnished the ratio of the resistance of the joint to a standard length of rail of known resistance, knowing which the desired result is readily obtained. Of cables for electric light and power transmission there were some very attractive items. A section of a cable designed to carry current at a pressure of 50,000 volts illustrated some interesting construction. Fine examples of high- and low-tension junction boxes were also shown which differed from the common form in use in the United States and were of most careful design. In the electro-chemical group, the displays were of laboratory apparatus, apparatus for technical use, and chemicals obtained by means of electro-chemical processes. A late form of ozonizer after the specifications of Prof. Dr. C. Harries, of the first chemical institute of the Berlin University, for use in the oxidation of various kinds of organic substances and effectively applied to the purification of water was shown. Other interesting exhibits were: four show cases with a collection of apparatus of Prof. Dr. Oswald, of Leipzig, of which a complete chrograph, an apparatus for the determination of the conductivity of different electrolytes, and an apparatus for the measurement of EMF by the compensation method, were the most interesting; and a form of electric apparatus with a Tesla transformer, designed by Prof. Dr. Drude, of the University of Glessen. A very impressive exhibit was that of a working laboratory, copied after one at the electro-chemical institute at Gottingen, which is under the direction of Dr. Nernst, of lamp fame. This laboratory contained a number of the latest forms of special apparatus designed by the director and his staff. Prof. Dr. Coehn showed some peculiar precipitates of carbon, and Prof. Dr. Ruff, of Berlin, exhibited his apparatus for the electrolytic production of calcium. In two special show cases were found two sets of apparatus of Prof. Dr. A. Classen, of Aachen, for different electroanalysis, employing current for either storage batteries or the ordinary 110-volt mains. In these cases were shown twenty-four pieces of apparatus of the highest scientific value, as they were used by the late Dr. Lupke, of Berlin. Among these was a device for the demonstration of the convertibility of chemical energy into electrical energy. In order to give a full conception of the extraordinary development of electro-chemistry, its extensive application and great importance in modern life, there was shown a most complete collection of samples of elements and compounds produced by electro-chemical processes. In addition to the common metals precipitated by means of electric current, rare metals, such as cor. didym were shown. The organic preparations were interesting to the expert chemist inasmuch as they prove that the production of organic compounds is restricted almost entirely to those obtained by electro-chemical reduction.

In the group devoted to electric lighting, the one new feature of special interest was the new type of Bremer lamp which has already been described as one of the special features of

the Electricity exhibits. Under the group "telegraph and telephony," were shown a number of instruments of novelty and interest. One of the latest improvements applied to telephone lines is the Pupin self-induction coil inserted at intervals in the overhead lines or cable and designed to diminish the damping effect of the cable line upon the talking current. These coils, but lately invented, have been tested on some of the long telephone lines in Europe and have been found to increase the line efficiency to a great extent. A universal measuring instrument for telegraph and telephone lines was shown. With this apparatus can be determined the resistance of single and double lines, the insulation of a single line from the earth, and of double lines from each other, the measurement of exterior current in the case of single lines and various measurements of current and voltage. There were shown a number of interesting samples of advanced construction of cables for telegraph and telephone purposes. One telephone cable had a capacity of 1,000 double lines, or a total of 2,000 wires, in a single sheath. The wires were insulated with colored paper, an ingenious color scheme being used to render the different wires distinguishable. Prof. Dr. Cerebotani had on display a new method for the transmission of pictures by electrical means, an apparatus for long-distance setting of type and a meteorological telephone. In the electro-therapeutic section, a large number of induction coils, made after the designs of Ruhmkorff, were shown in operation. Supplementary to these were shown types of interrupters, Roentgen tubes, rheostats and fluoroscope screens. An ingenious apparatus called the orthodiagraph was designed to enable accurate measurements to be made of the size of the heart and other organs, in connection with Roentgen tubes. An improved form of the arc lamp for the production of Finsen rays was also shown.

One exhibitor presented a full line of magnetic instruments including two electro-magnets for the production of intense magnetic fields, a bismuth spiral for the measurement of the fields so produced; a set for the magnetic testing of iron and steel; standard of self-induction; galvanometers, voltmeters, ammeters, standard cells. A frequency meter was shown, constructed from designs by Hartmann-Kempf, which embodies new and ingenious principles: a series of exactly tuned steel tongues are arranged to slide in front of an electro-magnet which is connected into the circuit, the frequency of which is to be determined; when the tongue with the same frequency as the electro-magnet is brought in front of it, an audible indication is given. A number of instruments were also shown the function of which is to transmit to a distance the temperature of a furnace or oven. These are applicable to temperatures of from less than freezing to 1,600 degrees. Another interesting exhibit was a collection of instruments designed to make dials or needles visible at considerable distances, rendering them especially adaptable to lecture table purposes. An electric oven for the exact determination of the fusion temperatures and the calibration of thermo-elements was exhibited; also electric ovens in which temperature of 1,600 degrees could be obtained. The electrical apparatus used in the equipment of the outdoor German railroad exhibit, located south of the Administration building, illustrated the highly developed electric signaling and blocking devices in use on the government railroads of Germany.

British Electrical Exhibits:

With the exception of dynamo electric machinery, the British exhibit contained apparatus used in almost every branch of the electrical industry, exhibited by various makers to illustrate, in a measure, the advance made in recent years in testing, measuring, calibrating and recording electrical phenomena both in the laboratory and in actual shop practice. The space allotted to Great Britain comprised seven thousand square feet and was fronted by a dignified and imposing facade. Nearly all of the instruments exhibited had been tested at and had received certificates from the national laboratory and the laboratories of Lord Kelvin and Dr. Muirhead, the latter dealing especially with sub-marine telegraph instruments. The general post office exhibited a set of instruments illustrating the progress made in the

transmission of telegraphic messages from 1883 to the present time. An operating exhibit was a working model of F. B. Behr's monorail system of high-speed railway, the construction of which was authorized by act of Parliament for the railway between Manchester and Liverpool, a distance of 70 miles. This car was designed to run at a speed of 110 miles an hour (the entire distance to be covered without a stop) on a road practically straight, the sharpest curves having a radius of 1,500 feet. A prominent display consisted of switchboard apparatus; another of samples of electro-chemically made reflectors and copper tubes and samples of electro-plating. Various lamps, X-ray and high frequency apparatus were also shown; also an extensive line of submarine telegraph apparatus with the latest Kelvin siphon recorders. A representative exhibit consisted of oscillographs and various electric recorders for laboratory use. Potentiometer sets, accurate to a remarkable degree, were also exhibited. Two fine exhibits of switchboard instruments of all kinds and types were made; also an extensive display of insulated cables.

A notable part of the Italian exhibit was a historical collection of the early apparatus made by Volta, Pacinotti, Belli and Ferraris. The indicating, integrating and recording instruments displayed in the Italian section are perhaps the best of their kind. Wires and cables, also carbons, occupied prominent space.

While Japan had been represented at previous expositions in the department of Electricity, the St. Louis Exposition was the first one in which it showed electrical machinery of Japanese design and manufacture. Probably the greatest interest was felt in the 150,000-volt testing transformer designed by Mr. Iijima and built at Tokyo. In the same exhibit was a direct current generator of five hp capacity, very similar in type to American machines of that size. While this is but a small machine, it shows that the Japanese are actually and successfully taking up the building of generators and similar classes of machinery. The largest exhibit included a Morse ink writer, a double current key, several Tervil telephone transmitters, a transmitter designed by Iwata, desk telephone self-restoring annunciators, switchboards, cables for various uses, and wires for use in telephone work. Among the cable specimens were single and double core telephone cables, three and five core cables, and subscribers receiving cords. In this interesting group was also a Wheatstone bridge, tangent galvanometer, differential and astatic galvo. The Japan electrical association of Tokyo exhibited a table showing the status of the electrical industry in Japan, while the Kyoto city council sent plane and photographs of a canal route with water-power electric plant. Several models of hydraulic electric power stations in Iyo as well as photographs of these installations were shown.

The Mexican display consisted largely of photographs and plans of the water power plants, electric railways and telegraph and telephone systems throughout the country.

Virgilio Mackado of Lisbon exhibited a case of books which he had written upon various electrical subjects.

The Electrical Congress:

The department of Electricity promoted and was largely responsible for the interest taken in the International Electrical Congress. While the call for this congress was sent out through the regular exposition channel of the bureau of congresses the development of the congress was primarily accomplished by the department of Electricity. This congress stood without a parallel among the five international electrical congresses held. The work accomplished by the general as well as by the official governmental delegates had and will continue to have a far-reaching international bearing; the published proceedings of the congress filled three volumes of approximately one thousand pages each.

CHAPTER IX

TRANSPORTATION

Era of the Automobile—Advance in Locomotive Standards—Tests of Power and Speed—Aeronautic Concourse—The Santos Dumont incident—Demonstrations of Dirigibility—The Flights of Knabenshue—Balloon Races—Kite Flying

THE great advance in the devices and methods of power generation and application have been extended into the agencies of transportation. Electricity and gasoline are made to serve now in successful competition with steam. The improvement and extension of electrical transportation has been one of the marked achievements of recent times. This advance, noted in the palace of Electricity, was emphasized in the palace of Transportation. Elaborately equipped electric trains were shown alongside of steam railway trains. The automobile display was an exhibit of progress. The first chapter in the history of the automobile was not written at the time of the Chicago Exposition. It is said there was not a single automobile in any degree entitled to the name on exhibition in 1893. At the Exposition of 1904 a considerable portion of the sixteen acres of space included within the palace of Transportation was occupied by automobiles ranging in value to a maximum of \$18,000. One of the events of the Exposition was the arrival of automobiles driven from Boston, New York, Philadelphia, Chicago and other cities across the country. The manufacture of automobiles in the United States was unknown in 1893 in other than an experimental way. At St. Louis there were exhibited 140 automobiles including types for general commercial purposes, as well as a great variety for conveyance of passengers.

Locomotive Evolution:

No less significant of the rapidly changing conditions was the exhibit of locomotives. The locomotive of today was shown to be colossal beside that which stood for the largest at the Exposition of 1893. The number of locomotives on exhibition at St. Louis was smaller than the number at Chicago. The reason was that locomotives, as improvements have been added, are fewer in types than they were a decade ago. In the perfection of locomotive construction, the builders are reaching certain standards which are reducing the variety, to the decided advantage of transportation. This recent tendency was strengthened materially by the operation of a locomotive testing plant throughout the exposition period at an expense of a quarter of a million of dollars. Locomotives of the several types were put through the severest possible tests. The machinery was driven at top speed with the locomotives standing perfectly still. Coal was weighed. Ash

was measured. Steam was gauged. Speed and power were recorded-all under the supervision of experts. The competition between locomotives at the Exposition produced results to guide builders for, years to come. The rule of strictest and most scientific economy has been applied as never before in locomotive manufacture.

The perfection and power of the machines of land locomotion have been paralleled in those of the sea. The leviathan of 20,000, even 30,000 tons now ploughs on its course at a rate that was the top of speed achievement by ocean racers of the previous decade. The motor boat and the torpedo boat are setting a maximum pace far ahead of anything promised on the water by the Chicago Exposition and equal to that which was recently regarded as high speed on land.

The navigation of the air, not thought of seriously at Chicago in 1893, was accomplished at St. Louis. As a result of the efforts of the aeronauts, engineers and inventors of the world to win the prize of \$100,000 offered by the Exposition for the successful flight of a dirigible balloon there was seen upon the exposition grounds a series of thrilling exhibitions of aerial navigation participated in by competitors from Europe and America.

The scope of the transportation exhibit was comprehensive. It included examples and illustrations of every character relating to vehicles, railways, transportation on water and aerial navigation. The participation was general, nineteen foreign nations being represented by displays. These were Argentine, Austria, Belgium, Brazil, China, Cuba, Denmark, France, Germany, Great Britain, Haiti, Holland, Hungary, Italy, Japan, Mexico, New Zealand, Nicaragua and Siam. The collection and installation of the exhibit was effected under the direction of Willard A. Smith, chief of the department of Transportation. In his report to Director of Exhibits Skiff, Mr. Smith submitted an analysis of the displays in the various sections of the department from which is taken the following:

The Universal Exposition of 1904 recognized fitly the tremendous importance of transportation as a factor in civilization and the marvelous perfection which it has attained by ample provision of exhibit space and facilities for a representative transportation exhibit. The railway and the steamship had their origin after the purchase of the Louisiana territory. Their extension and improvement have been continuous and every decade, shows an increasing ratio. At every great exposition they have had something radically new to exhibit; at the recent Exposition the latest achievements were shown in a background of reflection of what is to come.

Palace of Transportation:

The palace of Transportation was located near the administration entrance to the exposition grounds and in close proximity to the railroad tracks entering the grounds at that point. The railroad tracks were introduced into the western end of the building by easy curves. Twelve tracks were provided, aggregating about two miles in length within the building. The building was rectangular in form, 1,300 feet long by 525 feet wide, with a total available floor area of 620,400 square feet. There was no waste space and the arrangement of doors was such as greatly to facilitate installation and removal of exhibits. The architecture was imposing and appropriate and the design of the building was especially adapted to the effective display of exhibits. On the long north and south fronts were nearly continuous rows of large windows. The entire width of the building was spanned by

five well-designed uniform trusses. Successful endeavor was made to afford adequate illumination by day without the use of skylights; light being introduced through the monitor windows over each span of the five trusses. The toilet rooms were placed in the bases of the projecting pylons, and arranged to receive light and ventilation, and to be accessible from the exterior, so that no exhibitors were annoyed by being placed in the neighborhood of plumbing conveniences. At the east end a gallery 60 feet in width extended nearly across the building, a distance of 380 feet. This afforded a place for guard rooms and for the offices of the department chief and was an excellent point from which to view the array of exhibits which stretched out in impressive expanse below.

Scope of Exhibits:

The classification of exhibits in the department of Transportation included the following principal subjects: Carriages and wheelwrights' work; automobiles and cycles; saddlery and harness; railway yards, stations, freight houses, terminal facilities of all kinds; material and equipment used in the mercantile marine; material and equipment of naval services, naval warfare; aerial navigation. These individual groups were assembled into four main, distinctive divisions, according to generic relations as follows: Vehicles for use on common roads whether propelled by animal or mechanical means; railways; marine and aeronautics. Under these divisions in addition to operating demonstrations, there were assembled in the palace of Transportation about one thousand representative displays valued at something like \$3,000,000 and installed at a cost of \$800,000. These displays covered all of the 600,000 square feet of floor space and the full railway trackage of two miles (twelve tracks) within the palace of Transportation.

While the principal features of the exhibit were the much-discussed locomotive tests and the great aeronautic trials, almost every item of the general display was of extraordinary, while many were of commanding, interest. A review of the exhibits shows clearly the tendencies of the time toward improvement and affords a basis of comparison with the past and the future.

The perfection of the carriage builder's art of today is shown not only in the highest grades of work turned out, but in the wonderful cheapness of the ordinary grades. The exhibit of carriages, wagons and saddlery in all their variety at the Exposition indicated that American manufacturers rival if they do not surpass those of any other nation especially when cost and quality are considered. The changes in these and other vehicles propelled by animal traction have not been radical in recent years. They relate to styles, fashions and sizes and to such points as the increased use of metal in heavy vehicles, rubber tires and ball bearings. There were 330 vehicles of all kinds shown in the palace of Transportation, including light and heavy pleasure vehicles, those for passenger traffic, and freight wagons of every variety of traffic. There was also a very good showing of accessories of all kinds. Eleven foreign nations were represented in this class—Belgium, Brazil, China, France, Germany, Great Britain, Italy, Japan, Mexico, New Zealand, and Slam.

Twenty-four exhibits of harness and saddlery were presented in the American section representing all grades of work from the cheapest to the most expensive; and from heavy traffic goods to the most showy and luxurious. There were 51 foreign exhibits most of which were characteristic of the countries from which they came. Belgium, Brazil, Cuba, France, Haiti, Hungary, Italy, Mexico and Nicaragua made interesting displays in this group. The displays of Mexico and Brazil were exceedingly fine consisting principally of high grade and expensive saddles in which those countries especially excel.

The bicycle of which such numerous and large exhibits were made at Chicago in 1893 shortly after passed out of vogue. It will always be used to some extent. An effort has lately been made to revive its popularity. In the Transportation display were 70 bicycles, 5 tricycles and 24 motorcycles. The latter do not seem as yet to have achieved as much popularity in this country as they have abroad.

Arrival of the Automobile:

The automobile is the new development of recent years for use on common roads. There was none at the Chicago Exposition of 1893; there were 160 at St. Louis, of which 106 were American, 52 French and 2 German. Many shown were a combination of the best product of the carriage builder and the automobile mechanic. The high-grade automobile appeals equally to the artistic taste and to the engineer who admires a finely built engine. Machines that can make as fast time on ordinary roads as the speediest locomotive can make on iron rails are worthy of attention; they represent another victory over the impossible. Types of this class of machines, the very acme of the "newest" in transportation, could be seen and examined in detail. Of the American automobiles there were 35 electric of the following styles: Runabouts 11, broughams 3, landaus 2, surrey 1, victorias 3, hansom cabs 2, coupe 1, cab 1, stanhopers 4, traps 1, delivery wagons 3, delivery trucks 2, chassis 1. Six were for steam-power as follows: Runabouts 1, surrey 1, tonneaus 3, chassis 1. Sixty-seven were operated by gasoline as follows: Stanhopers 3, runabouts 20, tonneaus 19, touring cars with top 8, limousine 1, cab 1, chassis 6, delivery wagons 6, railway inspection car 1, buck boards 2. Of the French exhibitors 12 showed gasoline cars, 1 steam and 1 electric. The German cars were both gasoline. The French exhibit was well displayed and was a magnificent showing of the high-grade machines in which the French have led the world. The display attracted great interest and resulted in numerous sales.

The American automobile exhibit was entrusted almost wholly to that extensive and comprehensive organization, The American Association of Automobile Manufacturers. They fitted up the space artistically and uniformly throughout. It was probably one of the best instances of good exposition installation ever seen. In order that the exhibitors might profit by their exhibits, it was necessary to arrange for demonstrating. Passes to the grounds were issued to exhibitors for bringing in machines for demonstrating purposes. Such machines were permitted to come to the northeast entrance of the building, following in coming and going the course prescribed by the Exposition for all vehicles entering the grounds.

The World's Merchant Marine:

Water navigation is in some respects difficult to illustrate. Large craft like ocean going steamers can be shown only by models. These models are, however, now made with great accuracy and built like a watch. The world's merchant marine was in this way beautifully exhibited in the various sections. Small craft was shown in full size, great variety and marvelous perfection. Life boats and other safety appliances might also be studied to advantage. Western river travel was interestingly illustrated. The exhibits were chiefly representative of the merchant marine. The navies of the world were not represented. This is believed to be owing largely to the fact that the naval exhibit of the United States Government was made in its own building where it could not be compared with others; hence foreign governments did not care to be represented in the department's exhibits of this group. Great Britain maintained her reputation by exhibiting 44 models of steamships. The United States showed 15 marine models, Germany 8, France 3, Japan 9 and Siam 42. The Siamese exhibit consisted of models of native craft in great variety. Argentine exhibited a life boat; Austria, models of river and canal boats; Belgium, a variety of photographs; Brazil, a canoe 57 feet long cut from a single tree, a catamaran, river craft and photographs; China, a large collection of models of Junks for mercantile and war purposes; Denmark, a collection of models and photographs; and New Zealand and Holland each exhibited marine models and photographs. American exhibitors showed 58 boats of various types; three metal gasoline launches, and 11 wooden gasoline launches, ranging from 16 feet in length to 77 feet. The last named was a cruising launch of handsome design, finish and appointments. It formed an attractive and imposing feature in the building. In the German section there was a canvas canoe and other appliances used in German Antarctic explorations,

together with a model of the explorers' steamship. There was also a German collapsible row boat. France showed a 27-foot auto gasoline launch of latest design.

The unique exhibit of Japan was a delight to the visitor. A topographical map of the Japanese empire, Korea and Manchuria occupied most of the space and afforded at a glance a complete view of the transportation lines by land and sea. By deftly constructed models and by delicately colored photographs the visitor was given an entrancing view of a world both unique and artistic. An immense map of the world embroidered in delicate shades on white silk, a marvel of patience and good taste, was another rare feature of the exhibit. A first-class salon of Japan's largest modern steamships which ply the Pacific was reproduced, the decoration of which was rich in embroideries, lacquer and gilt work and carved woods of teak and camphor. It was a gem of art among surroundings ordinarily deemed prosaic.

The railway exhibit has been declared by good authority to be epoch making. In addition to the retrospective and contemporaneous exhibits, a work of scientific investigation was conducted which was valuable not only for immediate results but also as determining future methods.

Second Century of the Railroad:

The actual beginning of the second century of the railway was marked by the Louisiana Purchase Exposition. The first movement by steam on rails took place in February 1804, when Trevithick's first locomotive drew a train over the tramway at Merthyr-Tydfil in Wales. The incident is well authenticated. Two of the identical cars, or rather trucks, and a portion of the cast iron track and stone stringers were exhibited in the historical section of the Transportation building. In preparing the transportation exhibit at Chicago in 1893, it was considered important to celebrate the approaching close of the first century of railways by a retrospective or historical as well as by a contemporaneous exhibit. This idea was well carried out and the preservation of this historical exhibit by the Field Columbian Museum of Chicago rendered it possible to repeat its educational features at St. Louis, the Baltimore & Ohio Railroad Company undertaking again the work as it had prepared the original collection for 1893. Numerous and important additions were made to the exhibit and the elaborate and attractive plan of installation added very greatly to its value for the student and the general public. A description of this collection would require a volume by itself. It contained 63 locomotives of which 19 were originals-the remainder being full sized models constructed with the greatest care as to historic accuracy and so realistic as to deceive the casual observer. For all practical purposes of study these models were as good as originals, lacking only the sentiment which attaches to a relic. They illustrate every feature of the early development of the locomotive. They are working reproductions as to the extent that they can be drawn on their wheels; and the working parts make correct movements. The new features of the installation were that each locomotive stood on the accurately reproduced track of its period; and that they were manned by figures representing with a verisimilitude in some cases startling, the engineers and firemen of the time. The four corners of the exhibit were occupied by locomotives illustrating the development since 1876. One was the locomotive exhibited as a standard at the Centennial Exposition of 1876; the second a standard locomotive exhibit at Chicago in 1893; a third a standard locomotive of today, and the fourth the largest locomotive in the world-a mountain climber known as the Mallet articulated compound, to which reference is made in discussion of the contemporaneous exhibit.

The various stages of the development of railway track from the earliest cast iron flanged rails to the final standard patterns of today were illustrated, for the most part by actual relics. The types were shown by about 21 specimens with numerous variations. Among the many hundreds of photographs, drawings, charts, embraced in this collection, was a series of framed maps showing graphically the progress of railway construction in the United

States by decades-the last one bringing it up to 1904. There was the first iron bridge built on the continent; one of the first passenger coaches from Nova Scotia; a large number of railway appliances of various kinds, series of drawings representing the development of the brake and the brake shoe.

In this connection mention should be made of the accurately reproduced De Witt Clinton train, and the original private car which was built in 1842 for Queen Adelaide of Great Britain. These mark admirably the first stages of passenger car construction; and the latter seems to be in practically as good condition today as when first built. There was also a retrospective view given of railway equipment in the Belgian exhibit, where perfect models of passenger and freight trains of 1835 were shown with those of the present time.

Retrospective Exhibits:

Another retrospective exhibit of great merit was that relating to street cars and electrical roads installed by the St. Louis Car Company. At the head stood an old stage coach used in the Rocky Mountains in the ante-railroad days. Following came the earliest horse and mule car, next the cable car and electric car built in 1887 and then a variety of modern electric cars.

The contemporaneous railway exhibit was represented in all lines. More exhibits of track, locomotives, cars and their various appliances would have resulted only in duplication of types, without special advantage from an educational point of view. It is sufficient for the purpose of this report to show the trend of improvement without attempting description. What changes have taken place since the Chicago Exposition, eleven years ago?

Perhaps the most patent fact in comparing the contemporaneous exhibit at St. Louis with that at Chicago was the increased size, capacity and safety of railway track and equipment. This, with improved design rather than any revolutionary invention, marked the last decade of the nineteenth century and the earliest years of the twentieth. At the Chicago Exposition, omitting narrow-gauge, switching and light foreign locomotives, there were 29 engines having an average weight of 128,588 pounds. At St. Louis there were the same number (29) having an average weight of 195,239 pounds. This average was greater than the weight of the heaviest at Chicago, which was 195,000. The tremendous weight of this locomotive was severely criticized in the discussion of the technical societies in 1893 and 1894. It was believed that the limit had been reached and that no more locomotives of such "excessive" weight would be built. The prophets were wrong again, for the "St. Louis," named in honor of and exhibited at the Exposition of 1904, is over twice as heavy-weighing light, engine and tender, 393,012 pounds. This engine, however, a Mallet articulated compound, is a mountain climber and still an experiment and does not represent really the practice of today as properly as the ponderous regular service engine exhibited of 287,580 pounds. There were six others weighing over 200,000 pounds each. The heaviest engine at Chicago was exceptional, weighing 26,000 pounds more than the next heaviest which in turn weighed 13,000 pounds more than the next. Perhaps it would be fairer to omit the heaviest at St. Louis as being entirely exceptional-a sporadic case. We would then have the average weight at St. Louis of 188,176 pounds as against an average of 128,588 in Chicago-an increase of about 46% per cent. If the Mallet compound is included in the comparison the increase has been over 50 percent.

This increase in weight means of course, a corresponding increase in power. There have been many changes also in design, new methods of steam distribution, fuel economy, width of fireboxes, wheel arrangement, so that the locomotives of ten years ago now look antiquated and adapted only for use on branch lines and cheap lines for light traffic.

The most recent trend of locomotive improvement on both sides of the Atlantic is toward the balanced compound and the use of super-heaters. There were four balanced compounds, representing the most advanced practice; one from Germany, one from France,

and one each from the two principal locomotive building establishments of this country. Germany has shown more interest in superheating than any other country, but exhibited only one device and that not the one in most extensive use. The latter was to have been represented on a locomotive for testing, which, however, it was impossible to provide for the final program. This interesting field of experiment and investigation is evidently just beginning to attract the attention of American engineers.

Steel for Cars:

In 1893 the use of steel for the parts of cars hitherto built of wood made its first appearance. It was then hardly more than an indication of common things. So far has the use of steel advanced in eleven years that it hardly appeared to the manufacturers to be worthwhile to exhibit wooden freight cars at St. Louis-the only exception being refrigerator cars. Steel freight cars for every kind of service and steel parts for cars constituted an important and impressive exhibit of the new things which have come to stay. In passenger equipment steel under framing also made its appearance. The passenger cars exhibited marked improvement in design; and in some respects, a new era was marked. The ornamentation and architectural features showed a simpler and nobler taste. The meretricious has largely disappeared and, together with an improved taste which is abreast of the best in home and public architecture, there was evident care for sanitary considerations. The carvings, the upholstery and the fittings have been redesigned and simplified and now offer comparatively no home for microbes. The passenger car builders and the railroads seem to have united in a better art-not for art's sake only but for public sanitation. The old cars are still running and must run until they are worn out; but the public visited and studied these new designs and will profit both by the artistic and sanitary revolutions which are now fully launched.

To the general public perhaps the most attractive feature in the Transportation department was the motive turntable in the center of the building, carrying around and around high in the air one of the handsomest and most powerful specimens of the locomotive builder's art. The silent and invisible power which turned with such smoothness and apparent ease this tremendous weight while revolving the driving wheels at the same time has entered the transportation field in a most revolutionary manner since the Chicago Exposition.

It would from some points of view have been better if the motors and other apparatus of electric traction had been exhibited in this department instead of being grouped with other adaptations of that power in another building. The rapid development and encroachment of electric power were, however, very much in evidence in the track and car exhibits. In size, mechanical perfection and even luxury, the electric cars are now vying with the best on steam roads. Here, again, the historical element received attention and the development of intramural transportation was graphically shown. The electric locomotive, as developed up to the time of the opening of the Exposition, was for convenience installed in the Electricity building. The most recent work in this line had not reached the stage of success until the latter days of the Exposition and hence, of course, was not represented.

The advancement in the construction of permanent way has properly kept pace with that in equipment. Heavier rails, improved signaling systems, more substantial and important structures-all were well illustrated in the exhibits. Improvements in all the various appliances for cars, locomotives and track showed an advancement all along the line. These relate to increased capacity, economy of maintenance and operation, safety, comfort, and higher speeds. The exigencies of installation and the desire of foreign countries to mass their exhibits prevented such complete arrangement according to subjects as would have made study easy. A notable instance was an important track exhibit made by the German government, which was so large as to require an out-of-door location some distance from the Transportation building. In addition to France, Germany and Great Britain, other foreign nations represented by exhibits in this important group were Austria, Belgium, Brazil, Denmark, Italy, Japan, Mexico, Nicaragua and Siam.

Locomotive Tests:

It was desired to signalize the first great exposition of the twentieth century by some new departure which should be the starting point of new methods of advancement. No fitter method presented itself than the establishment of a locomotive testing laboratory on a scale adequate to the wants of the day. The improvement of the locomotive is, of course, the keynote of railway progress. It has long been felt by engineers that laboratory tests were necessary for determining and advancing our definite knowledge of the locomotive. Several small testing plants have been operated and have yielded a great amount of important information. They indicated something of what might be accomplished on a plant adequate in size, capacity and equipment for testing all types of locomotives at all possible loads and speeds. Here, then, was an opportunity requiring brain and money, but certain, if successful, to be epoch making.

It was believed that a world's fair offered exceptional advantages and opportunities for inaugurating such a new era in the study of locomotive performance and design. Existing locomotive testing plants indicated what might be done. At a great exposition the attention of the engineering world could be focused upon such a work, and co-operation secured as at no other time and place. The opportunity also of securing the most recent and advanced types of locomotive construction, home and foreign, was another important consideration. Work could be accomplished in a few months which would otherwise require years. While the data obtained would be exceedingly valuable the greater result anticipated was that of determining the feasibility and scope of the method of testing. The great question from this point of view was whether it was possible to construct and operate successfully a plant for testing locomotives of any design, weight and power. If this question should be decisively answered in the affirmative, the Exposition would be really the starting point in a new epoch of locomotive study and improvement. Should the results not be as successful as anticipated, the information obtained would still be of incalculable benefit and the effort would be a stepping stone to future success under other auspices.

The Pennsylvania Railroad system, which was well equipped for such an undertaking, received the suggestion sympathetically and acted upon it with characteristic promptness. Theodore N. Ely, chief of motive power, and J. J. Turner, third vice president of the company, in an interview in St. Louis with the chief of the department, agreed provisionally that the railroad would undertake the work. This having been promptly ratified at Philadelphia, a meeting of the mechanical officers of the system with the chief of the department of Transportation Exhibits was held at the personal office of the latter in Chicago. The general outline of the proposed plan was agreed upon and from that time the work began in earnest. The opportunity of securing F. D. Casanave, as special agent of the Pennsylvania system, to take the direction of the work, seemed almost a special providence as his qualifications and experience made him the one of all others to be desired for such a position. His breadth of view, courage and patience, backed and supported as they were, may only be appreciated by those intimately connected with the work.

The Plan of the Tests:

In order that the tests might be carried on in as broadly scientific manner as possible and that the results, which were to be given general circulation, might be accepted without question by all engineers and designers, letters were addressed to the American Society of Mechanical Engineers and the American Railway Master Mechanics' Association, stating what the Pennsylvania Railroad system had decided on doing, and asking that they separately join in this project by appointing three of their members to form part of the advisory committee.

This invitation was accepted by both of these bodies and by certain foreign countries which had also been invited to appoint representatives, the final complete committee con-

sisting of the following members:

Representing the Pennsylvania Railroad Company-J. J. Turner, third vice-president, Pennsylvania Company; Theo. N. Ely, chief of motive power, Pennsylvania Railroad system; F D. Casanave, special agent, Pennsylvania Railroad system; E. D. Nelson, engineer of tests, Pennsylvania Railroad Company, Altoona, Pa.

Advisory Committee-On behalf of the Exposition, Willard A. Smith, chief of the department of Transportation Exhibits; on behalf of the American Society of Mechanical Engineers, W. F. M. Goss, dean of the school of engineering, Purdue University; Edwin M. Herr, general manager, Westinghouse Air Brake Company; J. E. Sague, first vice-president, American Locomotive Company; on behalf of the American Master Mechanics Association, F. H. Clark, superintendent of motive power, Chicago, Burlington & Quincy Railroad; C.H. Quereau, superintendent of shops, New York Central Railroad; H. H. Vaughan, superintendent of motive power, Canadian Pacific Railway; affiliated members: Carl Steinbiss, director of Royal Prussian Railways; T. F. Aspinwall, general manager Lancashire & Yorkshire Railroad; H. F. Willie, engineer of tests, Baldwin Locomotive Works.

It was to be the duty of this committee to plan all tests and to pass on the results before they were issued, as well as to have general supervision of the running of the tests. The Pennsylvania Railroad system was to furnish and erect the testing plant and provide a competent corps of engineers for making observations. They also agreed to bear all expenses in connection therewith. The work of preparing the testing plant was placed under the direction of A. S. Vogt, mechanical engineer of the Pennsylvania Railroad. A careful study of the existing plants, particularly those at Purdue and Columbia, was made and a design based on this study but containing many improvements and changes, necessary because of the different conditions under which this plant was to operate, was developed.

Everything being in readiness on May 3, the first locomotive, a consolidated engine belonging to the P.R.R., was put on the plant and the work of breaking it in begun. A month was used in getting parts properly adjusted, and at the end of that time the formal tests started.

The testing apparatus consisted briefly of two longitudinal bed plates of cast iron secured to deep concrete foundations set in the bottom of a pit. The bed plates were provided with T slots running longitudinally, and a series of cast iron pedestals which carried supporting wheels were fastened to the bed plate by bolts in these T slots thus permitting adjustment lengthwise. The locomotive under test was carried on the supporting wheels whose axles were extended to receive absorption brakes. The turning of the driving wheels caused the supporting wheels to revolve, which motion was retarded by especially devised brakes to any extent desired. The work actually done by the locomotive consisted in overcoming the frictional resistance of the supporting wheels and brakes, the resulting force exerted at the drawbar being measured by a traction dynamometer.

There were altogether complete tests made on eight locomotives of which four were freight engines and four passenger--one German, seven American. The freight locomotives were tested at 40, 80 and 160 revolutions per minute with the exception of one which was tested at 40, 60 and 80 revolutions per minute.

The passenger locomotives were tested at 80, 160, 240, and 280 rpm, and the Cole balanced compound was also tested at 320 rpm. A number of tests with different percents of cut-off were made at each of these speeds. The duration of the tests varied, all at 160 rpm, and less being for three hours; at 240, two hours; 280, an hour and a half; and 320, one hour.

Bulletins issued later which have been published in handsome and permanent form by the Pennsylvania Railroad Company contain the complete and tabulated result of each test including a summary of the results of all tests and a discussion of the different types of locomotives and the effect of the features of their design as shown by the tests. These reports constitute a most valuable addition to engineering literature and will undoubtedly prove to be of much practical use to both locomotive designers and railroad companies.

The Aeronautic Concourse:

Early in 1902 Director of Exhibits Skiff conceived the plan of offering large prizes for achievement in aeronautics for the double purpose of providing an attraction for the Exposition and contributing an unprecedented stimulus to the advancement of a science the development of which lay principally in the future, but which had fascinated many brilliant minds. The Directors of the Exposition Company approved the suggestion made by Director of Exhibits Skiff and appropriated provisionally the sum of \$200,000 for its execution. Of this sum \$100,000 was to be devoted to the grand prize for aeronautic achievement considerably beyond anything yet attained; \$50,000 was for minor prizes, and \$50,000 for other expenses.

At that time the exploits of Santos Dumont at Paris had attracted great attention and the first step taken was to invite him to come as soon as possible to St. Louis at the expense of the Exposition for a conference on the plans and rules of the proposed concourse. The invitation was accepted by him. It was decided to place the entire aeronautic concourse under the direct charge of the chief of the department of Transportation Exhibits who proceeded to organize a conference on the subject of rules. The conference which met in St. Louis in April 1902, was composed as follows: Director of Exhibits F. J. V. Skiff, chairman; Charles W. Knapp and Nathan Frank, Committee of the Board of Directors on Aeronautics; Octave Chanute, C. E., Chicago; Robert Moore, C. E., St. Louis; E. C. Mosher, M. E., New York; Prof. A. L. Rotch, Blue Hill Observatory, Hyde Park, Mass; Prof. Calvin M. Woodward, Washington University, St. Louis; Santos Dumont, Paris, France; Willard A. Smith, chief department of Transportation Exhibits. After discussion and conference lasting several days, rules were drafted which after subsequent revision were unanimously approved by the conference, and having received the approval of the President of the Exposition were published in pamphlet form. They were sent to all obtainable addresses of people interested in aeronautics in all parts of the world. These included editions of technical journals, aeronautic clubs and societies. Wide publicity was given the plan through the press and this brought a demand for copies of the rules from nearly every civilized country.

As the time approached when it was necessary to prepare for entries in the contests, blanks were sent out asking for information as to the plans and purposes of proposing contestants. Replies were received from 97 persons and companies. Of these, 44 designated their apparatus as "air ships;" 23 as "aeroplanes;" 3 as "flying machines;" 10 as "balloons;" 12 as "kites" and 1 as "gliding machine." Several proposed entering more than one kind of machine. Altogether, eight parties paid the entry fee of \$250.00 for the grand contest. Of these fees two were returned having been paid under misapprehension and two were returned under the rules when the parties appeared with their apparatus.

A large, open and practically level field of adequate proportions was provided for the concourse as shown on the general maps of the exposition grounds. This tract was treeless and unprotected from the wind. A protection against the wind was required for all balloon or airship operations. It was decided to build a fence 30 feet high entirely around the grounds. When completed this fence was 3,364 feet in extent and the area enclosed by it was approximately 11 acres. It being impossible to inflate the gas bags of airships or balloons successfully in the open air, it became necessary to erect a building of suitable proportions and of construction compatible with the necessary strength of the structure though it was to be of very temporary character. The dimensions of the building were sufficiently large to provide in one-half longitudinally for the largest airship constructed up to that time, while the other half could be used at the same time for other airships and balloons. It consisted of two bays, each 44 feet wide, 50 feet high and 185 feet long in the clear, with a lower lean-to for shops and quarters running the full length or one side of the building.

Without knowledge of what the actual demand would be, it was necessary to provide for an almost unlimited amount of gas for the use of contestants. The city illuminating gas was found to be valueless for the purpose on account of its weight. It was also found to be

impossible to secure the necessary amount in a given time owing to the slight pressure at which it was furnished. It therefore became necessary to arrange for a supply of hydrogen gas; which was done though these provisions later proved unavailing and acid-made gas was finally used.

Santos Dumont:

For evident reasons reliance was placed in the highest measure upon Santos Dumont. On May 16, 1904, the President of the Exposition received the following cablegram from him: "Lost sixty horse power engine. Only able to get forty. Airship tried yesterday. Only goes less than twenty miles. Cannot race until speed condition is cut down to fifteen miles per hour."

At that time there had been no other formal entries for the grand contest. It was believed that a modification of the speed requirement would not only secure the participation of Santos Dumont but that it would prove an encouragement to others. The chief of the department therefore recommended the modifications requested, which having been duly approved were officially announced under date of June 1, 1904.

Santos Dumont advised that these changes were satisfactory in every respect. On June 26th his airship "Number Seven" was received at the aeronautic concourse. The gas bag of the airship was cigar shaped, 135 feet long, 23 feet in diameter, constructed of pongee silk, double throughout, reinforced at ends and along fins and around valves. The engine was 60 horse power; there were two propellers, one fore and one aft, and a rudder at the rear. Fuller description of the apparatus was not obtainable.

Mr. Dumont and three assistants had already arrived. The Exposition was then planning special features of interest for the celebration of the Fourth of July, and desired to have an exhibition flight on that day. Mr. Dumont after considerable negotiation contracted to make such a flight if the weather was suitable. The department entered actively upon preparation for the flight and no particular whatever was neglected. It had been understood that the Exposition would keep a Jefferson guard on duty over the airship at all times; also that one of Santos Dumont's assistants should always be on duty as watchman. At his request a room had been fitted up with sleeping accommodations for his men in the aerodrome.

The crate containing the envelope was opened in the aerodrome in the presence of the United States custom officials, Monday, June 27th, and it was found to be in perfect condition. By explicit orders of Santos Dumont and against the advice of the superintendent of aeronautics, the cover of the crate was left off during the night of June 27th to allow air to circulate around the envelope. The arrangements which had been made for accommodating the men whom Mr. Dumont brought with him were not availed of; Mr. Dumont sent his men away to sleep elsewhere. A Jefferson guard was constantly on duty, except for a few moments at one time in the night, when he stated that he went for refreshments. On Tuesday morning at 8:30 Mr. Dumont and his men arrived at the concourse and on examining the crate and envelope that it had enclosed found that the latter had been slashed with a knife and damaged so badly that Mr. Dumont deemed it necessary to return the bag to France for repairs. The shipment was made on July 2nd. The cases containing the car and engine were left in the aerodrome until July 11th, when they were removed by his orders to the Brazilian pavilion where they remained until returned to France some four weeks later.

The Exposition through its detective service promptly attempted to investigate the matter, but receiving no co-operation, was obliged to drop it without results. Santos Dumont took no steps to discover the perpetrator but contented himself with the statement that an enemy had done it. On leaving St. Louis he declared that he would return with his airship repaired in time to contest in September; but later declared that he would not be able to do so. By this untoward event the public was disappointed, and the large expenditure and liberal concessions made by the Exposition were in principal degree lost.

Benbow's Meteor:

Details are given regarding the apparatus exhibited and flights attempted during the season. While none complied with the rules governing the contest for the grand prize, and all therefore were in the nature of experimental exhibitions, some of the trials were very interesting and important.

T. C. Benbow, inventor and operator of the airship Meteor, arrived at the concourse July 27, 1904. Envelope, cigar-shaped, consisting of 21 longitudinal gores of plain silk varnished. Trap valve 14 inches in diameter in center at top and a combination neck and inflating hose immediately under it at bottom of bag. Length 74 feet, diameter 20 feet at center, capacity 14,000 cubic feet. Ascensional force, 950 lbs. (Hydrogen gas). Framework or car constructed of angle aluminum and steel; the main portion keystone in shape, prolonged fore and aft into long beaks of tubular steel, similar to and parallel with main spar and suspended from it by means of piano wire. The main spar, 50 feet in length of tubular steel, located immediately under center line of gas bag, midway between it and car and secured to bag by square mesh net. The platform of car divided into two parts, the engine in forward half, the rear occupied by the nacelle of the operator. Engine "Hercules," 10 hp., 4 cylinders; revolutions per minute, 2,500; weight, 180 lbs, cooled by small fan placed immediately in front of engine. Power transmitted to propeller by broad leather belt over pulleys. Propellers, two four-bladed fans, one on either side of car at center of gravity, constructed of muslin stretched over a triangular frame of bicycle tubing. By means of an eccentric hub the blades were collapsible during a portion of the cycle and are regulated by lever in reach of the operator. Revolutions per minute, 120; length of blades, 6 feet. Rudder constructed of muslin and stretched over frame of bamboo and attached to the car and main spar at rear; size, 4 feet by 10 feet. Total weight of apparatus, 600 lbs. During the trials and flights no perceptible speed was developed. There were three trial flights before the airship was "cut loose." The first of the set trials was made in the afternoon of September 6th. At this time the machine was equipped with four propellers. It was found after the machine had been lead around the concourse several times that there was not sufficient ascensional force to liberate it and the flight was postponed. The second trial was made October 27th, and the third, Saturday, October 29th. These trials were made after two of the propellers had been removed and the remaining two placed at the middle of the frame. These essays, like the first, were unsuccessful for the lack of sufficient lifting power. The first actual flight was made on Friday, November 18th, the start being made at 4:16 P. M. The wind being from the south with a velocity of eight miles per hour. The anchor attached to the airship was used as a cutaway rope and was at considerable distance below the car and in passing over the north fence of the concourse it caught on the top plate. With the aid of numerous volunteers, the balloon was landed on the lee side of the fence with considerable difficulty owing to the numerous wires and other obstructions. At five o'clock the balloon without operator was allowed to ascend and by means of several ropes was swung back into the concourse and taken to the aerodrome to repair the slight damage the machine received in landing. The second and last flight was made on Tuesday, November 22d, leaving the concourse at 3:15 P. M. and landing in Lindenwood, a suburb of St. Louis, 3½ miles south of the aerodrome at 4 :00 P. M. The first portion of the flight was an ordinary balloon ascent. The engine was not started on leaving the ground for the reason that the neck of the balloon through which the gas must escape when expanding was located immediately over the engine. After the airship had reached an equilibrium at an elevation of about two thousand feet, the engine was started, but owing to a leak in the gasoline tank was able to run only a few minutes. The landing was safely made and an attempt to return to the concourse without deflating the balloon was made. On reaching the exposition enclosure at the agricultural gate a slight breeze sprung up, and in maneuvering to cross the wires a rent was opened in the envelope, which allowed the gas to escape. The Meteor was removed from the exposition grounds December 8th.

The Berry Airship:

The Berry airship was an envelope constructed of varnished balloon fabric (cotton). When ready for flight having somewhat the appearance of an ordinary balloon excepting that the envelope is flattened, resembling two saucers placed edges together. Propulsion obtained by means of two propellers placed one above and one below the envelope on a hollow shaft, the base of which rests upon the engine platform in bottom of basket. Diameter 32 feet; height of envelope 20 feet; capacity 20,000 cubic feet; engine, 6 horse power; propellers, (of wood) two-bladed, 6 feet from tip to tip; basket (wicker), diameter 4 feet; depth 3 feet. This airship was installed in the aeronautic concourse north of the hydrogen gas plant. Ten thousand feet of gas from this plant was used during the first inflation but owing to a faulty valve was wasted. A second attempt to inflate the balloon was made by means of a vitriolic process plant which was erected at the Berry company's expense; the Exposition furnished the material. Twelve thousand feet of gas was in the balloon when a strong wind sprang up and whipped it until several holes were torn in it and this gas was lost. The third and last inflation was commenced December 4th, the gas being obtained from the Francois airship-connecting one end of the hydrogen gas plant pipe line to the Francois balloon by means of hose and connecting the other end at gas plant to Berry's balloon in similar manner. On December 6th the balloon was completely inflated but in letting it up preparatory to making a flight the wooden rim, to which the envelope was connected at the equator, broke from uneven strain and one of the ends opened a rent eight feet long, through which the gas escaped. This airship was removed from the concourse December 16th.

The Trials of Francois:

The airship "LaVille de St. Mande-Hippolyte Francois", inventor. Capt. Adreon Moucheraud, aeronaut. Henri Schneider, engineer. Joseph Pasquire, assistant. George Bleuze, assistant. The envelope was constructed of balloon fabric (cotton.) Elliptical in form, block pattern, varnished, reinforced at ends around valves and along fins at sides; with ballonnet containing one-tenth of the entire cubic capacity of the balloon. Provided with one large valve in top of balloon, 70 feet from forward end; lower part of balloon, 30 feet from forward end, one large expansion valve and one 6-inch inflating hose. Ballonnet equipped with expansion valve to open at a pressure of two kilos per square yard. Length of envelope, 32 meters (106 feet); diameter at center, 10.80 meters (36 feet); capacity 1,850 cubic meters (65,000 cubic feet); weight, 400 kilos (880 lbs.); ascensional force, 4,420 lbs. (Hydrogen gas). The car was constructed of spruce, bamboo, olive metal and steel. The car proper consisted of a grated platform surrounded by framework squarely braced, 16 feet wide by 14 feet long, forming the center of a ship-like body, which extended 36 feet both fore and aft. The prow in stern, triangular in form, coming to point at ends. The car suspended directly from the gas bag by small steel cables connected by toggles to the fins, three feet below the equator on either side. Length, 25 meters (85 feet); width, 6 feet; weight, 960 kilos. (2,090 lbs.): engine, Prosper Lamber (French), 24 horse power, 4-cylinder, weight 300 kilos. (660 lbs.); cooled by water circulating through radiating tanks at forward end of car. A tank containing sufficient gasoline to run the engine $4\frac{1}{2}$ hours, secured to an upright of the platform at rear. Power communicated to fans by broad belts over three-foot pulley wheels on main shaft. Engine supplied with muffler. Propellers, screw; propulsion obtained by means of four screw fans, one at each corner of central platform, constructed of varnished balloon fabric, stretched over a frame of olive metal, elliptical tubing. The two forward fans, 30 inches wide at tip by 24 inches, operated by suction; the two rear ones, 30 inches wide by 36 inches, by propulsion. No rudder used and the steering done by decreasing and increasing the speed of fans on opposite sides. Propellers, tip to tip, 3 meters (10 feet); width, 0.75 meters ($2\frac{1}{2}$ feet) at tip; total weight of apparatus, 3,630 lbs.; height over all, 17 meters (56 feet). Complete outfit arrived at aerodrome October 5th. The first

trial was made November 14th at 3: 44 P. M. The airship was operated under the direction of Count de la Vaux. The balloon was allowed to rise to a height of 100 feet, attached to the earth by means of two cables fastened forward and at rear ends of central platform. Owing to an oversight, a wire cable connecting the two legs of the car was left off and through this neglect the tip of one of the propellers came in contact with a brace, disabling the propeller. Length of flight 15 minutes. The trial demonstrated that the balloon under proper conditions, that is being liberated, was dirigible. Owing to delay in repairing the damage done during the previous trial, the airship did not make a second trial until November 15th, at 6:00 P. M. The wind was blowing from the south at a velocity of five miles. The balloon was held captive by means of one cable attached to car. M. Francois gave instructions to his men before leaving the grounds under no conditions to let go of the cable. These orders were carried out so strictly that when the airship was seen to be settling on the fence, they did not release their hold, bringing their framework in contact with the windbreak and wrecking the prow. The concussion caused by this contact opened a rent in the top of the envelope through which the gas escaped, and though Mr. Francois threw out ballast, the balloon gently settled to the ground. Volunteers succeeded in getting the airship into the aerodrome where it finally collapsed. An attempt was made to repair and fill the balloon, but owing to the damaged condition of the envelope, the gas escaped to such an extent that it was finally abandoned. The Exposition Company paid the amount necessary to cover the expense incurred in doing this. A net was built to cover the balloon and to take up to some extent the pressure on the top of it. The height of the airship when inflated being 56 feet and the clearance under the trusses of the aerodrome only being 50 feet, it was necessary to dig a trench 15 feet wide, 6 feet deep and 150 feet long to allow assembling of machine and taking it out of the aerodrome. This expense was borne by the Exposition Company. The balloon outfit was reshipped to Paris December 24th.

Knabenshue's Record Making:

The California Arrow-Captain T. S. Baldwin, inventor; A. Roy Knabenshue, operator. Cigar-shaped. Envelope of Japanese silk, block pattern, varnished and reinforced at ends and other points of uneven strain; provided with a valve in center of top, 14 inches in diameter, with neck of same dimensions and a 6-linch inflating hose 12 and 16 feet respectively from the rear end. Length, 53 feet; diameter, 17 feet; cubic feet capacity, 8,000 feet; ascensional force, 544 lbs. (Hydrogen gas). Framework or car constructed of vertical grained spruce, an equilateral triangle in form tapering to a point at ends and braced or trussed by piano wire; the whole attached to gas bag by means of diamond mesh net. Length, 40 feet. Propeller, oak frame covered with canvas and attached to shaft by means of a wrought steel hub, placed at forward end of rear. Length, tip to tip, 11 feet; angle of blades, 20 percent; revolutions per minute, 200. Engine, "Hercules," 10 feet from propeller at forward end of car; two cylinders, six horse power; weight, 66 lbs.; revolutions per minute, 2,500; cooled by large propeller. Rudder, light canvas stretched on bamboo frame, placed at extreme rear end of car, size 4 feet by 10 feet. Total weight of apparatus, 220 lbs.; maximum speed in calm about 12 miles. Arrived at aeronautic concourse September 10th. The first flight was made October 25th, starting from the aeronautic concourse at 2:00 P.M. The wind velocity as recorded at the weather bureau station in St. Louis at this time was 10 miles per hour, blowing from the west. The landing was made at 2:50 P. M., near Cahokia, IL, 11 miles in an airline from the exposition grounds. When over the Transportation building the engine of the airship stopped, caused by the carburetor becoming flooded with too much gasoline. From this time on until the landing the flight was simply a balloon ascension. Previous to the accident of the engine the revolutions made were conclusive evidence of the ship's

dirigibility. The second flight was made October 31st, the start being made at 3:37 P.M., returning to the lauding within the aeronautic concourse at 4:14 P.M., after being in the air 37 minutes. The course followed was east to south. The extreme point reached in distance was one mile from the concourse. The highest elevation reached was two thousand feet. A preliminary trial was made before the flight. The airship was taken out of the aerodrome at 1:45 P.M., and at two o'clock the engine was started. The trial was made captive at an elevation of thirty feet and ending in breaking one of the propeller blades by striking the ground. The repairs were soon made, and the ship was ready for flight, which was made as described above. A third flight was made November 1st, leaving the ground at 2:00 P. M. The direction was west and south. The landing was made in stadium field one thousand feet west of the starting point and was made at 2:52 P.M., elevation reached being 1,300 feet. The farthest point distant from the concourse was reached when the ship was over the Philippine reservation, about one mile south of the aerodrome. A fourth flight was made the second of November. The start was at two o'clock, and the course taken was north. The first landing was made at 2:45 P.M., near Camp Lewis. The engine stopped almost immediately on leaving the concourse, due to the weakness of the batteries used in obtaining spark for ignition. At 3:20 P.M., the engine was again started in the field where it landed, and an essay made to return to the exposition grounds. When at a point 600 feet from the concourse fence, the engine again stopped, and the flight became an ordinary balloon drift and ended at 4:10 P.M., in a cornfield at a point 1 mile north of Olive Street Road, 6 miles from Clayton and $6\frac{1}{2}$ miles from the World's Fair grounds. An attempt was made to return to the exposition grounds without deflating the gas bag and the enclosure of the concourse was reached when, by mistaken orders, the balloon was allowed to escape. The outfit was recovered the following day at Fern Ridge in a cornfield $\frac{1}{4}$ of a mile south of Clayton Road and $9\frac{1}{2}$ miles from the exposition grounds, and was returned by wagon that night, November 3d, to the aerodrome. The Arrow was removed from the aerodrome November 11th.

Balloon Races and Other Contests:

The only competition for the prizes of \$5,000.00 offered for the "Longest Distance," "Longest Time in Air" and "Nearest Washington Monument" balloon races was on August 27th (Liberal Arts Day), the contestants being: Geo. Tomlinson, Syracuse, New York, with a spherical balloon, 14,000 cubic feet; Carl E. Myers, Frankfort, New York, with spherical balloon, 8,000 cubic feet capacity. The rules governing the race were that there should be no intermediate landing and that the point of landing must be within 200 miles of the Monument and east of the west meridian of tile State of Ohio. The contestants did not reach the prescribed distance; Tomlinson landing near Wyoming, IL, 200 miles from St. Louis, at 4:40 P. M., August 28th, and Myers landing near St. Charles, MO, 22 miles from St. Louis, at 7:00 P. M., August 27th.

On November 11th a free balloon ascent was made by Paul Knabenshue, of Toledo, Ohio, aeronaut; A. W. McQueen, of Guthrie, Oklahoma, wireless telegraph operator, and W. S. Forman, of St. Louis, newspaper reporter. The purpose was to test the sending and receipt of wireless messages, which was successfully done. The balloon was in the air one and one-half hours and landed $3\frac{1}{2}$ miles away. The height reached was not recorded.

Announcement was duly made that the kite flying contests under the rules would be held Monday, October 17th, and succeeding days. An international jury was assembled for the purpose of directing the contests; the members being such German, English and American members of the general international jury of awards as had some knowledge of aeronautics and were available. Prof. C. M. Woodward, of Washington Univer-

sity, St. Louis, was chosen chairman, and Prof. F. E. Nipher, of the same institution, secretary. The contests were conducted, and measurements made by these gentlemen and Col. J. E. Capper, of Great Britain. In the contest with 800 feet of line to reach an altitude of 500 feet there were 15 entries of which 11 remained as qualified contestants at the close of two hours. In the mile high contest there were nine entries but no winners. The highest altitude, 3,751 feet, was reached by the kite of Silas J. Coyne, when its string broke. By action of the Executive Committee of the Board of Directors of the Exposition another trial was set for October 22d, the kites to be flown from the Plaza St. Louis. In the contest the highest point was reached by a "White Coyne" kite, sent up by William King-2,505 feet.

The tetrahedral kite, sent up by Prof. Alexander Graham Bell of Washington, D.C., was flown from the aeronautic concourse for exhibition purposes only several days during the month of October.

William Avery of Chicago arrived at the exposition grounds in the latter part of September preparatory to making flights with the gliding machine of Octave Chanute, C. E., of Chicago. The machine was assembled and ready for trial by the first of October, but there was delay owing to lack of electric wiring which was to be connected with a motor used in drawing the machine through the air until sufficient elevation was attained to cut loose and make the glide. During the first two weeks of October several trials were made on the stadium and elevations attained from 30 to 50 feet. The longest glide from the start of the aeroplane on the car until the landing was about 200 feet. The operator, Mr. Avery, preparatory to making the flight mounted a platform on wheels, which in turn was a miniature railroad track about 100 feet long a cord was attached to the gliding machine and also to a drum of the motor, some 400 feet away. When he was ready to start a signal was given the motorman and the power applied. Usually, he left the platform car at about 30 feet from the starting point, sometimes not leaving it until the end of the track was reached. Owing to the location at the stadium, successful trials were considered impossible by Mr. Avery and arrangements were made with the Exposition to allow these flights to take place on the Plaza St. Louis. On October 26th, electric connections being completed, the aeroplane and motor wagon were placed on the ground in the afternoon and at three o'clock a trial essayed. During the first trial Mr. Avery reached a height of 30 feet, when owing to a defect in the cord, it parted and he, to gain his balance, swung around at right angles and landed heavily on the asphalt path fracturing his ankle. No other flights were attempted as the injury was sufficient to keep Mr. Avery on crutches for two weeks.

In the estimation of many the tests and trials, seeking new attainment, conducted in connection with the exhibits of transportation and similar work of investigation carried on in connection with other exhibit departments ranked among the principal performances of the Exposition and developed a new *raison d'être* for such world gatherings.

CHAPTER X

AGRICULTURE

**Exhibits of Forty-three States—A Missouri Farm in Operation—
Dairy Demonstrations—Exposures of Adulterations—Far-reaching
Effects of Food Exhibits—Installations of Forty-five Foreign
Countries—The New Farm Machinery—Experiment Work**

THE farm of today is an institution with result-yielding organization and equipment. The modern farmer appraises the soil, fertilizes, cultivates and sows it with exact knowledge, and he garners and markets his crops with skill and assurance. The work of the agricultural experiment stations, national and state, was made plain in the exhibits presented by the Exposition relating to special education of every kind. The co-operation of the bureau of plant industry and other sections of the national department of agriculture has been productive of results throughout the country in the material form of increased returns and independence for the American farmer. The movement toward scientific farming illustrated largely as a desirable and necessary development of the future at the Chicago Exposition is now general. The extension of irrigation which has been so notable during the past decade has been among the agencies which have made for the increase of agricultural yield and the perfection of its methods. The systematic storing of water and its distribution through arid territory have been attended by results which will assure for irrigation steady and increasingly rapid promotion.

Progress Since 1893:

In improvement of agricultural machinery and in magnitude and variety of products of this character, progress since 1893 has been likewise notable. Almost every branch of agriculture and horticulture has benefited by new or improved equipment. Advancement is shown notably in cultivating machinery. Implements of this class have been made much lighter than the earlier patterns. They have, by reason of this change, been made to do more work. The sulky plow of 1904 is a great improvement over that of 1893. A new type of steam plow cuts twelve furrows. To the mowing machines of 1904 have been added roller and ball bearings, making the operation of them much easier. A hay loader that does the work of three men besides doubling the capacity of a team and wagon is a recent development. Hay carriers for unloading in the barn, baling presses-in short, implements which reduce the hand labor to a small fraction of what it was ten years ago have been invented and are now in regular use. The variety of machines has been reduced since the Columbian Exposition, but the fewer types of standards have been improved in many ways. By the use of selected steel and

other materials implements have been made more generally available, easier to operate and more durable, and much more effective.

At Chicago there were exhibited as novelties three rather experimental machines for corn harvesting. Since then, these machines have been perfected and have been put into general use. One of them cuts the corn and binds it into shocks. Another corn harvester picks and husks the ears, leaving the stalks uncut. Threshing machines show great advancement since 1893; the wind stacker and the band cutter and self-feeder are hand-saving auxiliaries.

Inventions for the Farm:

The invention of the steel windmill has proved of great and varied utility. In the days of the old wooden windmill comparatively few were made and sold. Now the annual output of steel windmills is between one hundred thousand and two hundred thousand a year. The steel windmill not only pumps water but cuts feed, grinds grain, saws wood and performs many functions on the farm calling for stationary power. The gasoline engine does similar service for the farmer and is in almost general use. Ten years ago, it was hardly known on the farm. Dairy machinery shows perhaps greater advancement than any other class of agricultural implements since the Chicago Exposition. Churns are now in use of sufficient size to work one thousand gallons of cream. Churns run by wind and steam and other power are employed on farms and elsewhere. Devices for the improvement of dairy operations are almost numberless. Ten years has added to dairying and to horticulture the immense advantage of refrigeration and cold storage at moderate cost. Something of what agriculture and horticulture have gained by the development of refrigerating machinery may be gathered from the fact that dairy and other animal products as well as fruits may now be carried around the world and kept in storage almost indefinitely. Refrigeration has made the whole world a market for any section, the quality of the yield of which raises it into general demand. The prosperity of some regions is almost as dependent upon refrigeration as that of others is upon irrigation.

The extensive manufacture of prepared foods is one of the developments of the last decade. The innovation of breakfast foods prepared from the best materials and by recently invented machinery is especially notable. The supervision exercised by the national government and by leading states of the Union to enforce purity in foods has also become a positive factor in more recent years.

The exhibits of Agriculture presented by the Exposition fully illustrated these and other phases of development. The original and most extensive pursuit of civilized man was naturally given first and principal consideration by the exposition management. The palace of Agriculture was the largest upon the exposition grounds. It covered almost twenty acres and contained nine miles of aisle or exhibit frontage. Its total floor area was 800,000 square feet. In this immense and handsome structure, pronounced to have been the most perfectly adapted exhibit building ever devised, there was assembled a comprehensive and accurately classified and installed display of the products and implements of the field.

The department of Agriculture as created by the Exposition embraced nineteen principal groups of exhibits, as follows: farm equipment-methods of improving lands; agricultural implements and farm machinery; fertilizers; tobacco; appliances and methods used in agricultural industries; theory of agricul-

ture-agricultural statistics; vegetable food products-agricultural needs; animal food products; equipment and methods employed in the preparation of foods; farinaceous products and their derivatives; bread and pastry; preserved meat, fish, vegetables and fruit; sugar and confectionery condiments and relishes; waters; wines and brandies; syrups and liqueurs distilled spirits -commercial alcohol; fermented beverages; inedible agricultural products; insects and their products-plant diseases.

World-Wide Participation:

Participating in the exhibit of Agriculture there were, in addition to hundreds of individual exhibitors, forty-three states and territories and forty-five foreign countries.

The states and territories represented by exhibits were: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Indian Territory, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, New York, Nevada, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Puerto Rico, Rhode Island, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, Wisconsin, Wyoming.

The foreign countries participating in the display of Agriculture were: Argentine, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, China, Costa Rica, Cuba, Denmark, Egypt, Formosa, France, Germany, German East Africa, Great Britain, Greece, Guatemala, Haiti, Honduras, Hungary, India, Italy, Jamaica, Japan, Mexico, Nicaragua, New South Wales, New Zealand, Netherlands, Peru, Portugal, Romania, Russia, San Salvador, Siam, South Africa, Spain, Sweden, Switzerland, Turkey, Uruguay, Venezuela.

Illustrative of the estimate of this exhibit held by those who inspected it, particularly by experts of high standing, the statement of A. Picard, commissioner general of the Paris Exposition of 1900, who also represented France in high official capacity at St. Louis, may be quoted. Mr. Picard was "amazed beyond expression at the exhibit made at St. Louis in Agriculture." He "had never imagined that such an impressive and dignified representation could be made of the products and requisites of the farm."

Working exhibits were distinguishing features. A Missouri farm was presented in process of cultivation and in full fruition and harvest. A model and extensive operating dairy with large daily product was another extraordinary exhibit. A modern cider mill was installed from which the yield flowed steadily; also a unique rice mill. Farm implements and machinery of many varieties were shown in operation. A typical Parisian bakery produced material daily output which was used at the most popular restaurants on the grounds; a model English bakery and confectionery did the same; likewise a number of American bakery and confectionery plants.

The exhibits of the foreign countries were very handsome and representative. Austria, Brazil, Canada, France, Germany, Great Britain, Italy, Japan and Mexico occupied the greater areas and presented the more comprehensive collection of displays. The installation of the sections of Brazil, Canada, France, Germany, Italy and Japan were elaborate and artistic, rivaling all others in the building. Much interest was shown in the foreign exhibits and much and elaborate information as to the latest methods and results in agriculture and the

preparation of agricultural products was obtained from the examination of them. The displays made by the individual exhibitors were numerous and of a high order of quality and interest. These, with the exception of exhibits of individuals included in the state groups, were mostly confined to implements, machinery and appliances and exhibits of food and allied products. The food exhibit embraced every variety of prepared food, with its process of preparation. The whole Exposition contributed to the food exhibit in its restaurants under direction of chefs from various lands. The restaurants representative of the nations, famous for their cooking and preparation of foods-France, Germany, Austria, Hungary, Italy, Holland, Russia, Egypt, India, Japan -were features of the food display. The opportunity to sample the dishes and beverages so eloquently reported by travelers abroad was unique. Tea, as served in China, also in Japan and India; coffee as made in Turkey, and Arabia and Brazil were available. The variety of the food and drink served was only rivaled by the skill and care with which they were prepared. The wholesome and at the same time exquisite culinary art of Germany was exemplified at the Exposition. The implement exhibit was notable in addition to its comprehensive and progress-reflecting character for the extent to which machinery in process-illustrating operation was introduced. The following review is from the report of Frederic W. Taylor, chief of the department of Agriculture:

The subject of Agriculture has received principal attention at all expositions but at none was it given such prominence as at the St. Louis Exposition of 1904. The chief source of the wealth of the Louisiana Purchase was regarded in its full importance by the authorities of this Exposition and in the extensive plan and liberal provisions made for a thorough representation of Agriculture.

Palace of Agriculture:

The building provided for agricultural exhibits was by far the largest ever employed for such a purpose. Of handsome design, its location upon an elevated plateau and its environments of trees, shrubs and gardens made this great palace of Agriculture especially attractive in the eyes of the exposition visitor. Its dimensions were 500 feet by 1,600 feet, which gave to it a floor area of 800,000 square feet, making it the largest building upon the exposition grounds. The height of the roof from the floor of the central nave was sixty feet, its height at the eaves was forty-two feet. The building faced north and south, its south end being raised twenty feet higher than the north end; this fact, however, was not in any degree noticeable to visitors.

The structure of the building was frame covered with staff, the roof being supported by wooden trusses on columns. These columns were so arranged as to divide the building into effective naves-the central one a span of 104 feet-which extended along the entire length of the building. The lighting of the building was ample and was secured by means of windows in the sides and ends and monitor windows in the roof. The side windows were installed fourteen feet above the floor, which gave ample space for wall exhibits and also provided excellent ventilation. The light from the roof was admirable, no direct sunlight being admitted as the monitors faced north. Ventilation was given in the roof by means of louvres in the clear story over the central nave of the building. At night thorough ventilation of the building was afforded by means of slat doors placed in a number of the entrances. The roof of the building was of gravel over the central nave and of composition material over the rest of the building.

The building was entirely without galleries or obstructions except the single gallery across the entire south end of the building, which was occupied by officers of the depart-

ments of Agriculture and Horticulture and by custom house officers. This gallery also contained a large hall for meetings of agricultural and horticultural organizations and other bodies.

The building was amply provided with entrances. Of the five main entrances, one was in the center of the north side, one in the center of the south side, one in the east and two in the west side of the building. Subsidiary entrances were inserted one hundred feet apart all the way around the building, which provided ample facilities for the ingress and egress of visitors. All facilities for public convenience and comfort were provided.

Arrangement of Exhibits:

The palace of Agriculture presented a systematic arrangement of exhibits pertaining to agriculture as set forth in the groups and classes embraced in the official classification of the Exposition, beginning with farm equipment and methods and extending on through the various forms, processes and stages of actual agriculture, including the harvest and the numerous specimens of raw yield, and finally to the finished marketable product, all in extraordinary extent and almost infinite variety.

The exhibit of agriculture was designed to show, first how to get the best results from the soil and the field, with the systems, implements, machinery, provided for and used to this end; second how best to apply this agricultural yield to the needs of mankind in the shape of the purest, most nutritious and palatable foods and other useful and needful articles-together with the machinery employed for that purpose. That the display was fully illustrative of these two important features will not be denied. To say nothing of the great collective exhibits, the incomparable alignment of state exhibits, setting forth the evidences of the agricultural conditions, methods and yields of each, constituted the greatest assemblage of field evidence, experience, performance and results that has ever been shown.

The co-ordinate implement display included the latest and most improved forms and patterns of every instrument, machine device and vehicle employed in preparing the soil, cultivating and harvesting the crop and shaping it for market. In the final product sections the same perfection of representation was apparent. The use of every edible and other variety of field product as food and otherwise, the methods of its preparation, its original and final form and the machinery employed in the preparations were shown.

Approximately one fourth of the area of the building was devoted to exhibits of various farming systems and equipments, including methods of improving lands, appliances for irrigation and drainage, and the remarkable variety of tools, implements and machinery designed and built by the ingenuity of American inventors and manufacturers for the purpose of simplifying and expediting the work of the farmer. These exhibits were of strikingly interesting and instructive character. Beside the modern display there was also a historical or retrospective exhibit by which was graphically shown the evolution of farm implements to their present remarkable state of perfection.

The exhibits of farm machinery in the United States sections were notably extensive and impressive, as the American machines of this class are generally accepted as being the best in the world. Especially is this true of harvesting machinery of which the United States produces over ninety percent of the world's output. A feature in the implement display that attracted great attention was a steam gang plow turning ten twelve-inch furrows at a time. This machine was shown in duplicate, one on the regular floor space in the palace of Agriculture, and one doing actual work outside, upon the grounds. The performance of this machine was extraordinary. Perhaps this exhibit illustrated more than any other single one the advance in agricultural methods since the Columbian Exposition of 1893.

The theory of agriculture as developed and applied in connection with various plants, grains and crops was fully and effectively illustrated by principal states in connection with their own and collective exhibits. The aids to agriculture illustrated in addition to those already described included specimens of fertilizers and systems for preparing and employing

them. An important and highly instructive group was devoted to plant diseases, useful and hurtful insects.

Illustrative Crop Exhibits:

The principal yield of various states were prominently represented in a succession of illustrative collective exhibits arranged to exemplify the product of the country and the processes employed in certain principal lines of agriculture.

The exhibit of corn in this special series was particularly interesting and imposing. A towering dome, sixty feet in height and of graceful outline, all of corn, in various tones and shades of color, emphasized the installation of this exhibit, rising commandingly and picturesquely in its center. Smaller domes stood at either end, one hundred and fifty feet away from the centerpiece while midway were towers forty-five feet in height. Missouri was the hostess of this group and held court under the imposing central dome, with Kentucky and Maryland as her handmaidens in the smaller domes and Nebraska and Indiana in the torts, the exhibits of other states and territories occupying conspicuous places. In addition to all known varieties and colors of corn, embracing white, canary, yellow, orange, light red, deep red, blue, purple, bronzed black and the striped varieties, this exhibit presented extensive samples of all of the corn by-products in their numerous varieties; starch, glucose, dextrin, sugar, syrup, oil, rubber, oil-cake and meal, germ oil meal, gluten meal, corn meal, grits, hominy, breakfast foods, malt, whiskey, beer, dry wines, alcohol, fusill oil, fodder, cobs, cob pipes, cob ash, shuck mats, mattresses, the whole making a strikingly attractive, interesting and instructive group.

The exhibit of cotton was also set in a striking dome-canopied installation. Texas and Mississippi held the principal attention here, the latter indicated by a colossal figure of "King Cotton" seated upon a heroic throne made of cotton. Georgia, North Carolina and other cotton states were prominently represented. Cotton in all of its forms, and the evolution of cotton from the picking and seeding to the ginning and baling and finally in the cloth, was shown. The seed was presented in a separate exhibit with its products of oil and the various cooking compounds made from it; also in the coarser forms of feed for stock, and as a source of nitrogen for plant food, as well as all of the uses to which the cotton seed oil is applied from making a dressing for salads to the preparation of numerous varieties and grades of soap.

The exhibit of tobacco occupied an area of one hundred by four hundred feet at the most prominent entrance of the palace of Agriculture, forming the introductory feature of the elaborate central aisle succession of special collective exhibits. Kentucky, the principal tobacco state, occupied one-fourth of this extensive space and presented the most complete exhibit of tobacco ever shown to the public, beginning with the seed bed and setting forth in succession the processes of cultivating, housing, curing and marketing the tobacco leaf. Tennessee also made an extensive and most artistic and representative exhibit. Other interesting and instructive exhibits were made by North Carolina, Virginia, Maryland, Connecticut, Pennsylvania and Cuba, as well as by a great number of prominent individual exhibitors. The installation of this remarkable tobacco exhibit was one of the striking features of the great array of attractive exhibits in the palace of Agriculture. Its centerpiece, an immense globe of tobacco, presenting a map of the world wrought in light and dark shades of granulated tobacco and supporting a full rigged ship of the type which conveyed the early colonists to our shores, rose almost to the apex of the roof of the Agriculture palace. The great globe was supported by a forty-by-forty foot tobacco base decorated by ornate panels and by sculptured figures, all symbolical of the industry and its history, and all of tobacco. Installed about this imposing, striking central structure were the process exhibits in which the whole story of tobacco was graphically told from the sowing of the infinitesimal seed to the manufacture of the rich resultant leaf into cigars, cigarettes, snuff, smoking and plug tobacco. A fermenter or curing house and a warehouse floor were shown, containing sam-

ples of leaf tobacco from all the tobacco growing states. The uses of the different types were illustrated; the export tobacco was shown, also the coarse and fancy grades, and finally the homely twist which the government permits the farmer to cure for his personal use.

The sugar exhibit was made chiefly by Louisiana and Colorado. The former illustrated the cane sugar, the latter the beet sugar industry, the products of each of which are active and growing rivals in the markets of the world. The planting and growing of the sugar cane and of the sugar beet and the methods of converting their juices into sugar and kindred by-products were fully and attractively presented.

It is universally agreed that the departure of making segregated exhibits of certain crops was not only effective but far more instructive than the methods heretofore employed. In former expositions no systematic effort was made to mass field products in generic, illustrative groups, with a view of facilitating by comparison and the other advantages of proximity their careful study. Generally, the intelligent visitor was handicapped in having to search through a whole exposition and view the exhibits of each of the states where the particular crop being examined was supposed to be found; and finding them had to recall color, quality and distinguishing characteristics of those already examined, as the remainder were reviewed. It was to remedy such a condition that the new plan was inaugurated of bringing together in great groups examples of the leading crops produced in various commonwealths of the United States, which served so well as special comparative and illustrative exhibits.

In the important series presented the spirit of friendly rivalry among the states was so strongly manifested by the painstaking elaboration which characterized their efforts in indicating the salient features of their respective yields as to make the whole a most comprehensive and graphic epitome of the culture, production and use of the great staples represented, far superior to anything previously seen.

Agricultural Products of States:

The exhibit of grains, grasses and plants and products made by the states and territories of the Union was, of course, most important and extensive. Numerous and excellent specimens of the varied yield of each state were presented in the handsome and comprehensive collective state exhibits.

Corn dominated the exhibits of the central states, particularly Missouri, Iowa and Illinois. Wheat was in prosperous evidence over a wide area as were the other important cereals, the western and northern states showing great improvement in extent and quality as well as in variety of yield. In this respect the so-called mining states furnished a distinct surprise, especially Colorado whose exhibit was a revelation of extraordinary agricultural wealth and possibilities.

Practically all of the states displayed large collections of vegetables of excellent quality, fine examples of the principal varieties being exhibited by each, giving definite illustration of the universal availability and excellence of the soil of this country.

Of the inedible products of agriculture, cotton was preeminent, all the southern states exhibiting rare examples of this invaluable staple, one of the great sources of our country's wealth and commercial power. The western, central and southern states presented graded displays of wool, all of the exhibits submitted showing material and gratifying improvement and extension of this important industry throughout the country. The exhibits of fibre were excellent and extensive and covered a wide area of production, also those of flax, oil producing and other useful plants.

The exhibits installed excellently reflected the natural and principal as well as the general yield of the various sections of this country as so far developed, and the methods in use for continuing and improving this yield, as well as for developing variety in view of new possibilities of soil, exigency and demand. They indicated abundant natural wealth of the soil practically everywhere within the confines of the states and likewise the capacity of soil

to produce great variety. The southern states for instance, whose yield of cotton, tobacco, sugar and rice has long been so extraordinary as to preclude their association with the production of other crops in the public mind, demonstrated that they could and did produce other important staples of the soil in abundance and in excellent quality. Arkansas showed practically all of the products of the northern and southern states. Sheafs of grain and cotton bales were used alternately to surmount the caps of its handsome installation.

The exhibit of Missouri was even more general and emphatic in the illustration of this important fact. No other commonwealth or other section of the earth of similar or approximate area ever presented an exhibit of yield of greater variety, quality, and abundance than that displayed by Missouri. Its truly splendid installation was possibly the most complete and handsome representation of agriculture ever made. While the keynote of Georgia's display was cotton, that state showed fine examples of cereals and forage plants. In addition to tobacco Kentucky displayed an excellent variety of other important products, including cereals and vegetables, as did Tennessee, Maryland, North Carolina, Virginia, Mississippi and Louisiana. Texas made a very elaborate exhibit, massing its products in attractive manner and making use not only of cotton and the other products usually grown in the south but of all the cereals and grains of the north. Not only did the southern states capably show their products in variety and specialty but their participation in the exhibit of agriculture and in the Exposition was more active and on a better and larger scale than ever before. Indeed, their exhibits were installed and maintained in such thoroughly good fashion as to put them on a par with the states of the north which have had for the most part much more experience in the matter of making displays.

As stated of Colorado, the exhibits of the western, mountainous and semi-arid states were, like those just referred to of the south, a pleasant and significant surprise. Few states displayed better material than Arizona. The great productiveness of and the excellent variety of products grown in these portions of the country where irrigation is required were well illustrated by the handsome exhibits of Idaho, Nevada, and New Mexico. Where only a few years ago grew nothing but sage brush, today the finest and heaviest crops are produced and in extensive variety. The exhibit of Utah was excellent and indicative of great promise of yield as were those of Montana and Wyoming. Irrigation is adding glory and prosperity to the earth. The exhibits illustrative of its steady progress through the desert were almost as interesting as those of the beautiful trail of green it is leaving along its course.

From the far west California sent increased and improved tidings of plenty. Heretofore this rich state has given its attention in the matter of displays chiefly to exhibits of horticulture. But upon this occasion the custom was varied, and a handsome and comprehensive exhibit of agriculture was installed which attracted universal attention and much favorable comment. The luxuriant and varied yield of the state is improving and increasing at a phenomenal rate; its exquisite exhibit fully demonstrated this fact. The exhibits of some of its counties marked as rich and as abundant production as has ever been secured from the soil.

Washington and Oregon presented excellent exhibits in practically all classes, with cereals, vegetables and wool prominent. Alaska made an interesting exhibit in its pavilion.

The central western tier of grain states, North and South Dakota, Nebraska, Kansas and Oklahoma territory sent displays that would have done credit to an agricultural or rather cereal empire. North and South Dakota evidenced the extraordinary development of the northwest while Oklahoma and the Indian Territory told of the rise of the new southwest. Nebraska and Kansas by their splendid exhibits ably maintained their position among the leading agricultural states of the country and the most productive sections of the world. Each of these commonwealths presented a handsome installation of grains and grasses, vegetables and other varieties of products of its latitude. In connection with its exhibit Nebraska supplied an auditorium in which moving pictures of farming life and methods were shown.

If to the states last mentioned we add the central and central northern states, Minnesota, Wisconsin, Michigan, Iowa, Missouri, Illinois, Indiana and Ohio, we have what

might be called the granary of the world. The incomparable exhibits of these latter commonwealths were truly indicative of this fact. Never has such a profusion of agricultural wealth or such splendid exhibit installation been seen as was presented by these states. Missouri's extraordinary exhibit has already been referred to. Minnesota, the "Bread and Butter State," surely and fully demonstrated its right to the name. Illinois and Iowa with Missouri set forth their glorious yield of corn and wheat along with their other endless variety of soil products; while Indiana, Ohio, Wisconsin and Michigan, each displayed a variety and wealth of yield in grains and vegetables sufficient to support half of Europe.

As from the formerly arid west, another surprise came from the east which is popularly supposed to be limited in agricultural resources. Connecticut presented one of the very best exhibits of seeds, grains, nuts and particularly flint corns seen at the Exposition, also a representative exhibit of tobacco. Maine, Massachusetts and Rhode Island also made interesting exhibits. The displays of New York and Pennsylvania were among the handsomest and most comprehensive in the palace of Agriculture, including in excellent quality practically all of the soil products of the temperate zone.

The state exhibits of agriculture, possibly, more than any other exhibits of the Exposition, indicated the solid growth of the nation.

Food Products:

Food products, vegetable and animal, methods employed in the production of and preparation of foods-meats, vegetables, farinaceous foods, bread and pastry, formed one of the most interesting and extensive sections of the palace of Agriculture. The housewife gained much information of value in the inspection of this collection of exhibits-knowledge that will make for economy and the health of families. This section, as much as, if not more than any other in the Exposition, reflected the variety, enterprise, energy and color of a truly modern age. It presented all the principal food products manufactured in this country, breakfast foods, predigested foods, a wide variety of cereal foods, all animal foods, butter, cheese, foods for the sick and convalescent, foods for young and old, fat and lean, dyspeptic and epicure, including all the ingenious machinery and peculiar methods used in the process of manufacture. The animal foods, refrigerated, dried, pickled and fresh, were well presented. In this connection the United States government made an experimental demonstration and exhibit of fresh meats taken from cattle especially fed and slaughtered at the Exposition. The display of meats, poultry, fish and game in preserved forms, and of the edible animal fats and oils constituted a very important and interesting group. The processes and appliances of preparation, preservation and transportation of both cured and fresh meats were shown. The packing industries presented miniature plants and illustrated in detail how the meat supply of the world is furnished. The leading part that refrigeration plays in any of these operations was illustrated.

Extraordinary Dairy Display:

The dairy display was the most painstaking, thorough, comprehensive and successful ever installed. Indeed, one of the gratifying revelations of the Exposition and the exhibit of Agriculture was the development and prosperity evidenced in the dairy industry by this extraordinary exhibit. Along with poultry products, the dairy yield of the country is fast assuming astonishing proportions and almost preeminent importance. The display presented indicated that the dairy zone is widening and that the product is increasing in quantity and quality at a rate hitherto unexampled and unsuspected. Dairying has become a science, a fact that means much for animal husbandry and general prosperity.

The origin and complete evolution of the dairy product or products, together with a scientific analysis of all of the processes and materials involved and pertaining to economy and efficacy in appliance and material in the dairy output was illustrated by the exhibit.

The display included (1) a dairy cow demonstration; (2) an operating dairy showing all of the processes through which the milk passes from cow to market in its various intermediate and final forms; (3) an elaborate display of butter, cheese and other dairy products in immense cold storage cases.

The butter and cheese exhibits were most novel and attractive. The former was installed in a handsome rectangular case 92 feet long by 36 feet wide and 15 feet high and was of a striking and ornamental character. Approximately 20,000 pounds of the finest creamery butter were used in this elaborate butter display presented in sculptural forms such as busts of famous men, at a cost of \$20,000. Fifteen states participated in the exhibit: Minnesota, Missouri, Indiana, Nebraska, North Dakota, South Dakota, California, Washington, Oregon, Kentucky, Kansas, Iowa, Illinois, Connecticut and Wisconsin.

In addition to the exhibit space the butter case also contained an extensive interior cold storage room in which were placed and examined the large samples of butter which were received each month and submitted to the jury tests. The temperature of the interior of the exhibit sections of this case was kept at 30 degrees Fahrenheit.

The cheese exhibit was considered to be the most representative and attractive ever shown. It was installed in a case similar to that in which the butter was presented, and of dimensions 92 feet long and 20 feet wide. This case also contained an interior store room for keeping and testing cheese samples and was kept at a temperature of from 35 to 45 degrees. New York, Illinois, Minnesota, Missouri and Wisconsin participated in the cheese display.

The operating dairy was perhaps one of the most novel, instructive, elaborate and popular exhibits ever installed at an exposition. It was located on the west side of the palace of Agriculture and occupied a space 200 feet long by 20 feet wide and 15 feet high. It was enclosed on the aisle side by plate glass through which the full operations of the dairy might be inspected by the visiting crowds. The divisions of the dairy and its work were: a record room; a chemical laboratory where samples of milk from the herds in the dairy cow demonstration were received and analyzed; a dairy wash room; a cheese room; a creamery room where the pasteurization and churning were done; a dairy room where small hand churns were operated; a dairy refrigerator; a sanitary milk room where the milk was clarified and bottled; and the wash and store rooms. All of these rooms were finished in white and were notable for their cheerful, attractive appearance and perfect cleanliness. Approximately from 75 to 100 pounds of butter and other products in proportion were manufactured in the operating dairy daily during the period in which it was conducted, and this product was sold upon the exposition grounds and in the city.

The dairy cow demonstration was inaugurated and conducted upon an extensive scale, after the most accurate methods and under the most precise supervision and inspection. No test made at the Exposition attracted more attention from those interested or received more sincere, active, and intelligent support. Experts presided over the tests, and the procedure in each case and in every particular was along rigidly scientific lines. Regulations governing all operations in every detail were issued and applied by the department of Agriculture. The cows entered in the tests were placed in model barns, carefully and regularly well fed, supplied with recorded proportions and weights of required varieties of foods, regularly milked and samples of milk taken at each milking, weighed, recorded and delivered to the laboratory of the operation dairy for examination and development. Careful record of the prices of each food, of the cost of sustenance of each cow, quality and value of yield of milk, was kept. The tests extended over several months and were thorough in every detail. Their object, which was to ascertain the yield capacity of various breeds and types of cows in butter and dairy products, as well as the value of various foods employed individually and in combinations, was fully realized. The results were in the highest degree satisfactory and of the utmost economic value. The results have been published in pamphlet form for permanent reference.

Vegetable Foods:

Cereals and their products and by-products afford a rich and interesting study. Specialization of the highest order was shown in this class of exhibits, as strikingly illustrated by the extraordinary collective exhibit of corn already described. A flour mill in operation was shown. Flours were exhibited made from all varieties of cereals, from lentils and from bananas; groats, potato, starch, gluten and every variety of prepared cereals, breakfast and other forms of foods were shown. The bread and pastry exhibits were extensive and extraordinarily interesting, embracing a large number of working displays including practical and large bread and pastry-making plants in which all the processes and appliances employed, kneading machines, ovens, pastry utensils were exhibited in practical use. Several of the exhibits illustrated the complete evolution of bread and pastry from the wheat grains through the flour stage into the dough and finally the finished products.

The exhibit of preserved vegetables was very large and varied, embracing every known species. It of course included the spices and condiments which have been developed in such great variety and superior quality.

Sugar was made from sugar cane where all could see the field plant, the raw and finished product and the developing processes. The sugar exhibit naturally extended into syrups, glucose and other products, including candies which with processes of making and packing were shown in variety. The preparation of chocolate for consumption and the application of sugar to fruit and candied cherries were interestingly illustrated by working exhibits.

Many of the good things to eat were prepared in view of and served to the public. One of the chief aims of the department of Agriculture was to present the processes of preparing different foods properly. In various booths of exhibitors in addition to those mentioned were teachers and chemists illustrating the lessons and principles of domestic science. Dainty and delicious dishes were served to tired visitors by courteous and attractive attendants in handsome booths. Here were found the most delicate products of the culinary art, light and fluffy biscuits, unadulterated butter, pure maple syrup, genuine fruit juices, preserves and pickles, chocolate and cocoa, coffee and tea, meats and fish, cakes and pastry, all constituting an exposition of processes and products, the like of which had never been seen theretofore. The chocolate manufacturers attracted attention by the clever way in which their products were displayed. Young women demonstrators gave lectures twice a day on how chocolate should be prepared. While the baker turned out cakes, pies and pastries, the public looked on and sampled them or was taken behind the scenes to see the machinery, the pans, molds and ovens in operation. Here, too, domestic lecturers were employed to teach the housewives how to bake bread.

The states of the United States furnished the delicacies which are so good a part of their hospitality. Tennessee had old Dixie dishes ready, smoking hot, and the down east Yankee could feast on boiled dinners in the New England section. Naturally a liberal installation and a representative variety of restaurants was found in the palace of Agriculture. This feature completed the practical food exhibit and furnished daily object lessons of its pertinence and importance.

Waters and Beverages:

An extensive section was devoted to waters and beverages. Its displays included all varieties of purified and artificial waters for table and fountain use, and of fermented and unfermented beverages, liquors, wines, cordials, brandies, grape juice.

The subject of pure drinking water is one than which none is or has ever been more important—a fact that is being acutely realized at the present time. The excellent varied and extensive exhibit of filters and filtered and otherwise purified and aerated waters for table use accurately reflected and emphasized the prevailing attitude of the public mind in this

direction and illustrated the serviceable supply that has been provided to fill a vital public need. The exhibit of carbonated waters and their use was extensive and elaborate. Soda fountains were exhibited in all their glory of mirrors, onyx, marble and sculptured figures. While drinking a glass of foaming soda the visitor could view the process of manufacture. One of the largest soda manufacturers in the world conducted a working exhibit to show bottling machinery in operation, as well as all supplies necessary for the carbonating and bottling of soft drinks and the preparation and preservation of fruit juices. Several exhibitors made other and similar working displays.

The same processes of evolution were demonstrated in the case of spirituous liquors. Breweries and distilleries showed their plants in operation. The display of beverages included wines and brandies, syrups and liqueurs, distilled spirits, commercial alcohol and fermented drinks of every kind, including pulque and koumiss.

The exhibit of liquors showed a gratifying general improvement and refinement in the product of that extensive industry. The same is true of the exhibit of beers.

The wine exhibit in the palace of Agriculture indicated that that industry is spreading and making much progress in the United States. Indeed, it may be safe to suggest that in a few years America will be furnishing the best and the most wine in the world. California, New York, Ohio, North Carolina, Missouri and other states displayed a progress in wine culture and product that was viewed and examined by foreign experts with surprise and not a little alarm. We already produce beyond all comparison the finest grapes in the world. If the same may not be said of our wines now it will be possible before many more seasons and crops have passed. The wine exhibit of California was one of the handsomest ever made.

Pure Food Propaganda:

For years there has been waged a warfare against food adulterations. In the exhibit of foods and their accessories many splendid ideas of great educational value were worked out in a most practical and valuable manner. The gospel of good health through the science of pure food was spread in all directions. Many of the visitors to the food exhibit of the Exposition came as delegates to the national and international conventions. There were food congresses and food conventions for exposing fraudulent foods and for illustrating the wisdom of correct labeling of products. The most important of these was the international Pure Food Congress which continued for six days, and which was attended by eminent food experts and specialists from all parts of the world. A "Pure Food Day" was held at the Exposition as a part of the program of the convention of the National Association of the State Dairy and Food Departments of the United States. This association made a most important educational exhibit in which the consumer was shown the different values of food products, their chemical analysis, correct and fictitious labeling and all the workings of their departments and laboratories.

No inspection of foods and food products would have been complete without a demonstration arranged to show plainly and fearlessly the extent to which adulterations and substitutions are perpetrated. The pure food commissioners of the various states made and conducted the most important and exhaustive exhibit of this nature ever seen. To the man who has intelligent concern for the integrity or quality of the food he eats this exposition of adulterations and sophistications constituted one of the most instructive exhibits of the Exposition. That the demonstration was fearlessly and honestly conducted was plainly evident. Almost numberless brands of food adulterations were placed on exhibition by the pure food commissioners. The space devoted to these exhibits covered 10,000 square feet and included exhibits from the Massachusetts board of health and from Illinois, Wisconsin, Kentucky, North Carolina, the Dakotas, Oregon, Kansas, Ohio, Connecticut and other states. The exhibits showed adulterations of all kinds of food and beverages, together with samples of adulterants, the tests that have been applied and about two thousand brands of food products that have been found by the state government laboratories to be adulterated.

The following contemporary press review of this exhibit succinctly sets forth its extraordinary details and striking revelations:

"A square yard of flannel colored pink with the poisonous aniline dye extracted from a pint bottle of tomato catsup. Jars of candles colored with more poisonous aniline dyes. The beautiful orange phosphate that looks like the real thing at the soda fountain found to contain benzoic acid, coal tar dye and no orange extract. A fluid labeled "Pure Lemon Extract," made of the deadly poison, wood alcohol and aniline dye, containing no lemon oil whatever. Down a long list we might go, telling the secrets of those who are putting dollars into their pockets by putting poison into our foods. If you want to have your faith in mankind rudely shaken take the time to look about the exhibit of the National Association of State Food Commissioners in the south end of the palace of Agriculture. Kentucky shows a case of flannel cloths colored with dyes taken from commercial foods which have been used as evidence in Kentucky courts against food poisoners and adulterators. Here are some of the original packages with the names of the manufacturers still on them, along with the certificate of conviction by state food commissioners and chemists. Threats of trouble have been made by the makers of convicted articles, but no trouble has come and the condemned goods in their dress of glaring and lying labels still point a moral and emphasize a tale. Here are great photographs of microscopic enlargements which illustrate that some commercial lard is chiefly tallow and much butter principally oleomargarine. One must often wonder whither the good and pure have gone. Maple sugar is chiefly cane sugar, honey is glucose, maple syrup is glucose a little thinner with a color tone a shade deeper due to burnt sugar. Vinegar is acetic acid colored with burnt sugar. Cayenne pepper is a little capsicum and a great deal of nut shells ground fine and colored with aniline dyes. All the adulterators have a line of aniline. Jellies and jams are any old thing from macerated pumpkins to good apple sauce mixed with timothy seed and colored with aniline dyes. It is a sorry thing for honest makers of canned goods that such stories must be told, but sorrier still for the great American digestive system if we are not put on our guard against the unscrupulous. When state laws provide for the confiscation and destruction of adulterated foods and a term behind the bars for the convicted offender the public health and private stomach will be safer. The tendency of the law-making is in that direction. Another kind of fraud shown up in this exhibit is the deceitful package. Bottles that boast large contents and fail to keep the contract are here in all sizes, patterns and shapes. The bottle with deep panels and prismatic sides, the flask with a raised bottom, the cruet with a thousand facets are all here in the purgatory of the public gaze, like the prisoner in the stocks on the public street, shame-faced and guilty or defiant and insolent."

In addition to the astonishing exhibit of adulterated foods there were shown all the different brands of breakfast foods and their relative nutritive and dietetic value, forming altogether a school of instruction in a matter that concerns the health of the people.

The Federation of Women's Clubs passed a resolution at its meeting in St. Louis demanding legislation to secure purity of the food supply of the people and pledging their support to secure such legislation from Congress and state legislatures. Some idea of what this means for the cause of pure food in this country may be gained from the statement that the Federation of Women's Clubs represents a million of the foremost women of the land, the leaders in educational thought and social activity in the various communities in which they live and all representing an influence, the force and the value of which it is impossible to measure at this time. With a million women arrayed against fraudulent manufacturers of food products and against dishonest labeling, defeat for the champions of pure food and drink products is not imminent. Possibly the most marked advance accomplished in this section was the conviction it brought about in regard to the proper labeling of foods and the desire for uniform and national foods laws and the prohibition of coloring matter and antiseptics in foods. The general sentiment created in favor of the labeling of all products so that the public shall know of what they are composed was more fully emphasized than ever before. The department jury in Agriculture adopted a resolution in favor of prohibiting

labels that are untrue or misleading. The food congress adopted a resolution condemning the use of chemical preservatives and coal tar dyes. Recent federal legislation reflects the lesson and influence of the pure food exhibits.

Factories in Region of Raw Products:

An important feature of the agricultural exhibit, though not consciously pertaining to it and represented indirectly was the evidence it extended of the constantly growing and very proper tendency of locating the manufactory adjacent to the raw product. This movement, first instanced by the corn and flour mills is rapidly being exemplified by the various other manufacturing plants employed in the preparation of agricultural products for the market. It is apparent in the tobacco industry, the cotton industry, the fibre industry and is becoming more and more apparent in the food industry. Setting aside the great abattoirs from consideration, which are possibly the most prominent examples, we find the vegetable preserving plants getting closer and closer to the fields of their supply, as well as the mills which put out their almost universal yield of breakfast foods, and which, along with the flour mills, are beginning to dot the agricultural country.

Foreign Exhibits:

The foreign exhibits in the palace of Agriculture in addition to being very attractively displayed and handsomely installed were, in many instances, very comprehensive. France and Germany presented the most extensive collections, occupying greater space than the other foreign nations.

An extensive exhibit was made by the Argentine Republic, including an extraordinary collection of grains, vegetables and seeds, principally consisting of flax. Flours, pastes, bakery products, dairy products, preserved meats, fish, fruits and vegetables, condiments, honey, confectionery, wines, liquors, beers, fibres, wool and skins were also presented.

Austria made an interesting display in a number of the principal groups of the department, especially including wines, liquors, waters, pastries, spices, hops.

Belgium presented an excellent exhibit, installed in the Belgian pavilion and covering all except one of the exhibit groups of the department of Agriculture. Principal features of this exhibit were: tobacco, grains, foods and machinery for making same, including bread, pastries and other farinaceous products, preserved meats, fish and vegetables, dairy products and plans of dairies, sugar and machinery, confectionery, wines, liquors, beers, plans of farms and equipment implements, agriculture systems, fertilizers.

A very large and most excellent display was made by Brazil, covering every group of the department of Agriculture. Its coffee exhibit, the most elaborate and extensive ever made, astonished the world. An excellent exhibit of tobacco, cigars, cereals and flours was presented, including manioc flour, banana flour and wheat, corn and rye flour. An elaborate display of Brazilian wines, liquors and beers was also a feature of the exhibit, as was the fibre display including cotton and other textile plants. The display which attracted much attention and favorable comment contained examples of numerous important varieties of agricultural yield, sugar, rice, chocolate, vegetables and vegetable oils, dairy products, preserved meats, fish, vegetables and fruit, honey, condiments, spices, pastry, biscuits, together with table waters and systems, illustrations, studies and statistics of farming.

Bulgaria's exhibit which was installed in the palace of Varied Industries contained some fine tobacco, cigars and liquors; also an interesting exhibit of cereals and vegetables. The exhibit of Canada was one of the handsomest in the palace of Agriculture. Cereals dominated it and these were shown in all varieties. An excellent display of syrups also was

made. Other principal items shown were vegetables, tobacco, cheese, milk, flour, cereal foods, whiskey, porter and honey.

Ceylon made an extensive exhibit of teas and spices, also presenting collections of fibres, spirits, tobacco and agricultural implements.

An interesting exhibit was presented by China which covered practically all the groups of the department of Agriculture and which was installed in the palace of Liberal Arts. The exhibit of silk culture was very fine, as was that of teas, confections and textiles. Examples of cereals, vegetables and tobacco, together with models of farm buildings and agricultural implements were presented.

Costa Rica presented an extensive collection of coffees and cocoas; its display also included tobacco, chocolate, beans, dried fruit, wines and an important collection of fibres.

A splendid exhibit was installed by Cuba which was carefully examined and much admired. Its display of tobacco and cigars of course far excelled all others. Superior exhibits of coffee, sugar and fibres also were presented. The Cuban display included, in addition to its rare horticultural exhibits which were installed in the same group, grains, vegetables, flour, banana food products, chocolate, guava jelly and paste, coconut oil, cheese, wines, spirits, rum, liquors, beers.

An interesting exhibit of dairy equipment installed by a Copenhagen manufacturer represented Denmark.

The rich products of the irrigated valley of the Nile were presented by Egypt, its display including examples of barley, wheat, maize, rice, millet, a great variety of vegetables, oil seeds, peanuts, forage plants, dates, melons, sugar and cotton.

The exhibit of France, which included those of its colonies, covered all the groups of the department of Agriculture from methods and equipment up to products and their final market form and uses. The French wine exhibit was of course superb in selection and installation. It was said to be the finest display of foreign wines ever seen in this country and represented an extraordinary number of exhibitors from all the wine districts of France. In the same section were the exquisite French liqueurs and brandies arranged in rich and attractive setting. The whole made a most remarkably rich and handsome exhibit. The French confectionery display was of a very high order of selection and was very attractively presented. The quality and variety of this exhibit were instructive as well as interesting to the inspecting public. The high degree of perfection to which vegetable culture and preservation has been brought in France was well shown. The famous French asparagus and strawberries were interesting items of this exhibit. French bread is growing popular over the world for its many good qualities. A bakery in operation practically illustrated how this bread and all the famous French pastries are made. Other interesting exhibits of the French section were a collection of plans of farm buildings; drainage and irrigation plans and models of appliances; studies and statistics of agriculture; agricultural implements and machinery and models; fertilizers; tobacco, cigars, cigarettes and machinery. The exhibit further included an exhaustive collection of the cereals of France and Colonies carefully and correctly classified and labeled; seeds; olive oil; plant and nut oils; vegetable oil soaps; fibres; cotton; wool; plans of creameries and dairies; cheeses, butter; equipment and materials for preparation of foods; flours of wheat and rice; farinaceous products, starch, pastes; a large variety of biscuits; preserved meats and fish, attractively arranged in glass and tins; sugar, coffee, tea, condiments, spices, table waters, cider, beers.

Germany's Scientific Farming:

A most thorough and instructive exhibit of economical and scientific farming was made by Germany, which attracted much attention and received the high commendation of experts. Farm equipment, models and examples, photographs, maps, literature and statistics were included in this exhibit which was an interesting and faithful reflection and analysis of the successful husbandry of one of the foremost agricultural countries of the world.

Excellent examples and illustrations of the various crop products were shown, including specimens of various growths of hops and of Germany's famous sugar beet. Another important and interesting exhibit was presented in the section of beverages and food products. Germany's famous wines were fully and handsomely displayed and its remarkable progress in wine culture shown. The beer exhibit was of course the finest presented in the foreign sections; and the exhibit of table waters was excellent. An interesting and extraordinary array of preserved meats and vegetables, and other foods, together with food making machinery, cooking apparatus, constituted important items of the section. Other features of the German exhibit, which included an excellent display made by its East African colony, were attractive displays of fine tobacco and cigarettes, sugars, coffees, spices, condiments, fibres, cotton, wool.

The principal exhibit in the British section was the extensive operating bakery and confectionery which occupied one of the largest allotments of space and one of the most prominent sites in the palace of Agriculture. As was the case with that in the French section the products of this bakery and confectionery were sold fresh to the public, though more attention was given to the selling phase in the British exhibit, large accommodations for the public being provided in the way of tables, chairs, counters. The hot scones, nut buns and ice cream made and distributed at a price by this plant proved very popular indeed apparently as much so as the bread and pastry products of the excellent French bakery. Other exhibits in the British section which also included certain colonial exhibits were: agricultural implements, fertilizers, agricultural reports, investigations, statistics, tobacco, cereals, fibres, coffees, teas, nuts, wines, liquors, beers, whiskies, spices, condiments.

A small exhibit of brandies was installed by an individual exhibitor of Greece. Guatemala's exhibits embraced collections of grains, vegetables, coffees, sugars, liquors, beers, bitters, medicinal plants, dye plants, fibres, cotton, silk worms, cocoons.

A considerable exhibit of coffees, tobacco, rum and liquors was made by Haiti. Sugar, starch, ginger, honey, preserved fruits, cotton and wax were also included in its display.

Honduras presented an interesting exhibit of coffees, sugars, spices, rice, wheat and other grains, and vegetables, also an extensive collection of medicinal plants, roots and barks (317 specimens), dye woods, fibres, vegetable wax, bananas, coconuts.

Exhibits of flour, wines, liquors, also of silk culture were installed by exhibitors of Hungary.

The Italian exhibit offered features of installation that were among the finest, if not the richest and most attractive in the building. The exquisite art of Italy was fitly reflected in the exhibit, some of the cases holding the display being of the rarest and daintiest execution. The art of its exterior was continued into the perfection of each item in the display. The confectionery exhibit for instance was one of the most select, elaborate and artistic ever seen, in some respects surpassing even that of France. Italy's wines and liquors were also handsomely and effectively presented as were its rare varieties of olive oil and its other famous condiments. The exhibit included agricultural systems, equipment and machines, tobacco, cereals, alimentary pastes, cheese, preserved meat and vegetables, honey, fibres.

India presented an elaborate exhibit of teas and some coffee, spices and condiments in the East India pavilion.

Jamaica was represented by an exhibit of rums and cordials.

Japan's Agricultural Systems:

The exhibit of Japan including Formosa was one of the most interesting displays in the palace of Agriculture. Its principal item was tea which was exhibited in many varieties. Other important features were exhibits of rice, tobacco, barley, sugar, meal, macaroni, vermicelli, ginger, pepper, condiments, relishes, peanuts, dried and preserved fruits, fish, meats, vegetables, waters, fermented beverages, beer, sake, grasses, fibres, jute, sponges. The Japanese exhibits of food and drink were the source of much information. The display

contained instructive and complete exhibits of agricultural systems, especially of tea and rice culture, also an important exhibit of silk worm culture.

An extensive and important exhibit was made by Mexico. Its display of fibre, including hemp, sisal, cotton, was one of the largest and best shown. A superior display of coffees was offered and of tobacco and cigars. The cereal and vegetable display was very extensive and representative; so were those of sugar and sugar cane. Other principal items were table waters, beers, wines, liquors, flours, pastes, salt, spices, condiments, honey, wax.

The exhibit of the Netherlands included excellent examples of coffees, chocolates, cocoa, spices and tobacco. Some fine cheese and liquors were also shown.

New South Wales made an exhibit of grains, flour, vinegar, wines, ales and wool. New Zealand presented an excellent exhibit of hemp. Its display included grains, grasses, dairy appliances, cordials, beers, waters, filters, wool, hops, tallow, skins.

Nicaragua made an extensive exhibit which was installed in the Nicaraguan pavilion. It included coffees, sugar, cocoa, rice, wheat, corn, beans, tobacco, cigars, starch, condiments, brandy, liquors, waters, fibres, barks, oil and medicinal plants, dye woods, licorice root, cotton.

Peru offered a creditable exhibit of coffees, cereals, sugar, tobacco, cotton, wines and liquors.

The exhibit of Puerto Rico was a significant illustration of the promise of that rich land. Coffee and tobacco were among the principal articles exhibited and the examples were of excellent quality. The display further included sugar, rice, corn, vegetables, cocoa, coconuts, flour, starch, honey, spices, condiments, rum, fibres, cotton, wax.

Next to France, Portugal made the handsomest and most complete exhibit of wines presented in the foreign section of the palace of Agriculture. Its exhibit of olive oil was also very important, as was the display of preserved meats, fruits, vegetables and fish. Agricultural implements and treatises, flour, pastes, cheese, butter, jellies, condiments, spices, vinegar, carbonated waters, liquors, spirits, beers, fibres, cotton, wool were also presented.

Romania was represented by exhibits of confectionery and liquors.

Exhibits of tobacco, tea, candles and fruit waters were among the displays representing Russia, installed by individual exhibitors.

San Salvador was represented by an exhibit of coffee.

The exhibit of Siam was very interesting and included collections of rice, vegetables, tobacco, spices, condiments, spirits, fibres, cotton, with systems and appliances for silk culture, sugar making and agriculture.

A collection of useful and harmful insects was sent by South Africa. Spain was represented by an excellent exhibit of wines, brandies, olive oil.

Examples of cheese, also of punch and ale were presented by individual exhibitors representing Sweden.

Milk chocolate and beers were among the exhibits representing Switzerland. Exhibits of confectionery and liquors were presented by Turkey.

Uruguay was represented by an exhibit of liquid meat.

The exhibit of Venezuela contained some excellent examples of coffees, also of cocoa, chocolate, sugar, tobacco, wine, bitters, rum, fibres and medicinal, textile, dye tannin, oil, resin and aromatic plants.

CHAPTER XI

HORTICULTURE

Fruit Exhibits of California and Missouri—Experiments in Cold Storage—Fifty Acres of Horticulture and Agriculture—The Flower Shows—A Model Park—The Floral Clock—Seven Acres of Roses

AN exposition limited to Agriculture could not have been planned on a scale more extensive than was the exhibit of Agriculture at the Exposition of 1904. This also might be said of the great display of Horticulture.

In improvement of horticultural methods and in magnitude and variety of products, progress since 1893 was shown. The fruit growers of the world joined in a demonstration of this progress. The fruit exhibit made by the states of the Union was an inspiration. The conservatory in the palace of Horticulture placed at the disposal of cultivators of plants and flowers furnished evidence of the results attained in Floriculture, as did the fifty acres of plants and flowers bedded about the palaces of Agriculture and Horticulture. The horticultural exhibit embraced representative collections arranged under the following heads: Appliances and methods of pomology, viticulture, floriculture and arboriculture; appliances and methods of viticulture, pomology, trees, shrubs, ornamental plants and flowers; plants of the conservatory; seeds and plants for gardens and nurseries; arboriculture and fruit culture.

The displays assembled under these principal sections were contributed by thirty-eight states and territories of the United States and by eighteen foreign countries. The states and territories of the Union participating in the exhibit of Horticulture were as follows: Arizona, Arkansas, California, Colorado, Connecticut, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Montana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York, Nevada, Oklahoma, North Carolina, Oregon, Pennsylvania, Rhode island, South Dakota, Texas, Tennessee, Virginia, Washington, West Virginia, Wisconsin and Wyoming. Foreign countries participating in the exhibit were: Argentine, Austria, Brazil, Ceylon, Canada, China, Costa Rica, Cuba, France, Great Britain, Haiti, Italy, Japan, Mexico, Nicaragua, Portugal, Siam and South Africa.

Surprises in Fruit:

The fruit exhibit, like that of Agriculture, was productive of pleasant surprises indicative of the rapid growth of certain states in Horticulture. Colorado demonstrated to the world that it produces in increasing abundance other riches than silver and gold. Many others of the popularly considered mining states did likewise. The fruit exhibit of Missouri was naturally the largest. In addition to being a phenomenal fruit state, Missouri was the hostess of the occasion. Cali-

fornia came next with luxury and variety. The south, the west, the east and the north, and the rich central states were well represented. Every variety of fruit grown in the temperate and semi-tropical zones was included. A feature was the demonstration of the results of cold storage upon fruits, through extensive experiments in the application of cold storage. In the fifty acres devoted to the great outside garden were growing trees-ornamental and evergreens, shrubs, plants and flowers of all kinds-the display covering the sloping areas about the palaces of Agriculture and Horticulture. A great flower show was held in the conservatory of the palace of Horticulture and was admired by many thousands of visitors. The improvement that has been effected in the implements and appliances of pomology, viticulture, floriculture and arboriculture was well indicated by the exhibits of tools, devices and apparatus. A review of the special features of the Horticulture exhibit prepared by Frederic W. Taylor, chief of the department, is presented:

In proportionate degree with Agriculture the importance of the great and rapidly growing industry of Horticulture was recognized by the Exposition of 1904 in the provision of ample facilities and accommodations for a representative exhibit. In addition to being of handsome and appropriate design, the palace of Horticulture was the most extensive in area ever provided for exhibits of such character. It was 800 feet in length by 400 feet in width. It consisted of a main portion of 400 feet square, with wings extending in opposite directions each 206 feet by 235 feet. The central portion of the building was designed for the exhibition of pomaceous and other fresh fruits and was admirably adapted for that purpose. The floors of the wings were sunken nine feet below the level of the main portion of the building, which afforded excellent opportunity for a general review of the exhibits installed therein. The east wing was enclosed in glass, providing a conservatory in which to display those plants which could not be shown outside. This section was employed to excellent advantage for the flower shows of the Exposition. The west wing of the building was designed for the display of horticultural implements and buildings. The light and ventilation of the palace were excellent. The practice of introducing slat doors in certain of the entrances of the building at night aided greatly in the matter of ventilation. In connection with the palace of Horticulture a horticultural plant house was provided for working purposes.

Fruit Exhibits of the United States:

Nearly all of the states, except a few along the Atlantic seaboard, made exceedingly creditable exhibits in the fruit hall of the palace of Horticulture. As might have been expected, the exhibits from Missouri were most extensive and attracted much attention. California also made a magnificent exhibit which was closely inspected and universally admired. Other states making especially attractive exhibits were Illinois, New York, Connecticut, Colorado, Washington, Oregon, Kansas, Nebraska, Iowa, Minnesota, Michigan, Indiana, Texas, Virginia, West Virginia, Mississippi, Louisiana, Tennessee, Florida, Arizona and New Mexico.

The Missouri exhibit was very handsomely installed, being enclosed in an elaborate ornamented facade provided with numerous decorative arches. California presented a similarly elaborate installation upon the opposite side of the fruit section. Its facade was in the mission style and was ornamented with oranges. Most of the other states mentioned introduced attractive architectural features in their installation. Those remaining relied upon low, flat exhibit tables with or without railings surrounding the spaces.

Apples constituted the principal item of the fruit exhibit. This fruit was presented in all of its glory and in radiant profusion. Almost every state sent specimens.

For their exhibition a special plate selected for the purpose was employed by all states

exhibiting. Among the principal varieties of apples shown were the following: Arkansas Black; Baldwin; Baltimore; Black Twig; Clayton; Early Pennock; Flora Bell; Gano; Grimes; Huntsman; Ingram; Jeffries; Jonathan; Lawyer; Lady Sweet; Lowell; Maiden's Blush; Missouri Pippins; Nicajack; Northwestern; Greening; Ortley; Rome Beauty; Smith's Cider; Shockley; Willow Twig; White Winter Pearmain; Wealthy; Wolf River; Winesap; Yellow Newton Pippin; York Imperial.

The gathering, keeping and exhibition of the excellent specimens presented in the great apple exhibit was a study and a task-an important experiment. Much of the success of the exhibit during the first three or four months of the Exposition was directly dependent upon the perfection that has been reached in cold storage. Nearly all of the exhibits of apples, which constituted about nine-tenths of the fruit shown, had been placed in cold storage soon after the crop had been gathered. In many cases the apples were kept in local storage houses until the spring of 1904 when they were shipped to St. Louis in refrigerator cars and there cared for in storage until required for use upon the exhibit tables. Nearly all the states had from one hundred to twelve hundred barrels of fruit in cold storage, the largest amount being for the Missouri exhibit. In addition to apples from the crop of 1903, the Missouri exhibit contained specimens of Gano picked in 1901 and 1902.

The lesson of the apple exhibit seems to be according to certain experts and, considering keeping and other desirable qualities in the fruit, that the following should be the order of requirements in selecting varieties for future planting: hardiness, productiveness, resistance to fungus diseases, cold storage, quality, size and color.

Beside the extraordinary exhibits of apples, the displays presented by the respective states and territories embraced superior examples of all other varieties of fruits, berries, nuts, thoroughly representing the rich yield of tree and vine in the United States. As indicating the distribution of this yield throughout the territory of the United States and illustrating the introduction of successful fruit culture into new sections and states, the following summarized report showing the varieties of fruits exhibited by the respective states and territories will be interesting.

Alaska - Wild fruits.

Arkansas - Apples, peaches, pears, plums, cherries, grapes, strawberries, raspberries.

California - Grapes, oranges, lemons, citrus fruits, plums, prunes, apples, peaches, pears, quinces, apricots, cherries, nectarines, dates, figs, olives, pomegranates, persimmons, fruit preserved, fruit processed, fruit in solution; nuts, almonds, walnuts, English walnuts, chestnuts.

Colorado - Apples, peaches, pears, quinces, plums, prunes, crab apples, cherries, grapes, raspberries, gooseberries, currants, strawberries, dewberries.

Connecticut - Apples, peaches, apricots, cherries, plums, pears, currants, grapes, raspberries, cranberries, walnuts, chestnuts, hazelnuts, butternuts.

District of Columbia - Strawberries, gooseberries.

Florida - Citrus fruit, pineapples, pomelos, mangoes, pears, oranges, other tropical fruits, pecans.

Georgia - Pecans.

Idaho - Apples, peaches, pears, plums, prunes, quinces, grapes, almonds, chestnuts, currants, berries, pecans, butternuts.

Illinois - Apples, peaches, plums, pears, quinces, crab apples, cherries, grapes, gooseberries, raspberries, blackberries, strawberries, dewberries.

Indiana - Apples, peaches, pears, plums, quinces, crab apples, grapes, blackberries, strawberries, raspberries, pawpaws, persimmons, nuts.

Indian Territory - Apples, peaches, pears, other fruits.

Iowa - Apples, peaches, pears, plums, cherries, grapes, gooseberries, other fruits.

Kansas - Apples, peaches, plums, pears, cherries, crab apples, quinces, grapes, strawberries, blackberries, raspberries, dewberries.

Kentucky - Apples, strawberries, other fruits, hickory nuts, walnuts.

Louisiana - Oranges, lemons, figs, apples, peaches, plume, pears, strawberries, pomegranates, watermelons, pecans; orange, fig, pomegranate and other fruit trees.

Maine - Apples.

Maryland - English black walnuts and butternuts.

Michigan - Apples, pears, peaches, plums, cherries, quinces, grapes, cranberries.

Minnesota - Apples, pears, plume, grapes, strawberries, raspberries, blueberries, blackberries, dewberries, cranberries, gooseberries, currants.

Mississippi - Apples, peaches, other fruits, pecans.

Missouri - Apples, peaches, pears, plums, cherries, quinces, crab apples, apricots, grapes, currants, raspberries, blackberries, gooseberries, strawberries, dewberries, wineberries, huckleberries, pawpaws, persimmons, chestnuts, preserved fruits. This exhibit represented fifty-two counties of the state and approximately five hundred individual exhibitors and constituted one of the largest and most representative displays of fruits ever assembled.

Montana - Apples, crab apples, plums, prunes, strawberries.

Nebraska - Apples, peaches, pears, plums, cherries, currants, strawberries, raspberries, blackberries.

Nevada - Apples, walnuts, almonds.

New Mexico - Apples, peaches, plums, other fruits.

New York - Apples, peaches, pears, plums, quinces, grapes, currants, other fruits.

North Carolina - Apples, peaches, plums, grapes.

North Dakota - Apples, crab apples.

Oklahoma - Apples, grapes, pears, peaches, cherries.

Oregon - Apples, pears, peaches, plums, prunes, cherries, grapes, crab apples, quinces, blackberries, processed fruit, nuts, walnuts, collective exhibit of fruits and Jellies.

Pennsylvania - Apples, walnuts, chestnuts, hickory nuts, butternuts.

Rhode Island - Displays of state's pomological products in museum jars; charts, photographs and reports showing horticultural development and results.

South Dakota - Apples, plums, other fruits.

Tennessee - Apples, peaches, pears, plums, quinces, strawberries, grapes, cherries, nuts.

Texas - Apples, peaches, pears, quinces, plums, grapes, citrus fruit, oranges, lemons, persimmons, pomegranates, pecans. The pecans of this exhibit attracted much attention by their extraordinary size and quality.

Virginia - Apples, grapes, pears, cranberries.

Washington - Apples, peaches, pears, quinces, grapes, cherries, plums, prunes.

West Virginia - Apples, peaches, pears, plums, grapes, cranberries, pawpaws, other fruit.

Wisconsin - Apples, plums, grapes, cranberries, other fruits.

Wyoming - Apples, cherries, currants, plums, gooseberries, raspberries, strawberries.

Foreign Fruit Exhibits:

The fruit exhibits of the foreign countries while not so extensive or representative as those of the United States were very instructive and interesting. Canada maintained during the entire season a very creditable display and Mexico kept up a fine exhibit of the tropical fruits. The exhibits of the participating foreign nations contained varieties of fruits and nuts as follows:

Brazil - Peanuts.

Canada - Apples, pears, plums, strawberries, blackberries, raspberries.

Ceylon - Models of fruits.

Costa Rica - Oranges, lemons, pineapples, bananas; wax models of fruits.

Cuba - Oranges, lemons, limes, grape fruits, mangoes, guavas, bananas, guanabana

and other luscious tropical fruits in solution.

Great Britain and Colonies - Mangoes, vanilla pods, fruit processed.

Italy - Fruits, almonds, chestnuts, hazelnuts, pistachios.

Japan - Oranges.

Mexico - Oranges, lemons, limes, pineapples, mangoes, bananas, coconuts, peanuts, other nuts, apples, quinces, strawberries, pomegranates, guavas, tamarinds.

Nicaragua - Tamarinds, chestnuts.

Porto Rico - Tamarinds.

Portugal - Almonds, locust beans, figs, chestnuts.

Siam-Models of Siamese fruits.

The exhibits of flowers, plants and shrubs made by the floriculturists and arboriculturists of the United States was the most extensive and elaborate ever made at an exposition.

The Outdoor Displays:

The growing plant, shrub and flower display was indeed extraordinary. It occupied practically fifty acres of ground, the entire area surrounding the palaces of Agriculture and Horticulture, and included almost every variety of bulbs, plants and shrubs, flowering and otherwise, and many varieties of ornamental trees and evergreens, all of which were supplied and presented purely as exhibits. The entire tract was laid out and planted under the direction of the chief of the department of Horticulture, and the grading, sloping and road building done under the supervision of that department, by the Division of Works.

The result was the conversion of what had been a clay hill with gaping wash gulleys into a graceful and exquisitely beautiful panorama of lawn, water bodies, flowers and shrubs, plants, and trees. With the intention of making it an object lesson as well as a pleasure to the visitor, this great outdoor exhibit or model horticultural park was laid out as simply as possible. Its sections and beds were so arranged and so penetrated and bordered by paths as to be of easy and effective access and also to permit of direct passage through any part of the reservation to other sections of the exposition grounds. Planting was begun in the spring of 1903 and continued thereafter, as necessary or desirable, until the opening of and also during the Exposition.

The plans adopted provided for an attractive treatment of the slope east of the palace of Agriculture, including in addition to handsome settings of trees flowering and other shrubs a great rose garden of about seven acres, and immediately to the south two small bodies of water filled and surrounded with aquatic plants. The various terraces were treated in a formal manner with hedges and flower beds in designs. The flower beds were of allegorical suggestion, depicting the history of the Exposition and of horticulture. Commencing on the left were two scroll beds upholding a fleur-de-lis. In these scrolls were the names of Napoleon and Jefferson, the principals responsible for the Louisiana Purchase. In the fleur-de-lis were the letters L. P., designating the Louisiana Purchase. Farther to the right were two similar scrolls upholding the American shield and in these the names of Presidents McKinley and Roosevelt appeared. The first named issued the proclamation announcing and endorsing the Exposition and the second renewed and extended it. These scrolls also upheld a shield in which were the letters L.P.E., the whole of these supporting the American flag which was in the center. On either side appeared "1803" and "1904," the first being the year of the acquisition of the Louisiana Territory and the second the year of the holding of the Louisiana Purchase Exposition. Farther to the right was a similar range of flower beds which were of a horticultural nature and in the scrolls appeared the names of a prominent seedsman, a prominent nurseryman, a renowned horticultural philanthropist and a renowned arboriculturist. Similar scrolls and fleur-de-lis flanked the Louisiana Purchase Exposition flag which was the center of this range of beds. The beds mentioned were planted with bulbs of hyacinths, tulips and crocuses to give them early effect and the center of one section was planted in large beds of tulips.

When finished and inspected by the public the rose garden contained more than ten thousand plants, of practically every variety hardy enough to grow and bloom out of doors. Nearly all of the hardy varieties had been planted in the spring of 1903, thus making possible the presentation to the public during the Exposition of such quantities of splendid bloom, growing on strong, sturdy plants as had never been seen before. All the roses made a good growth, blooms of "Paul Neyron" being cut with stems four feet six inches long; others made a growth of as much as six feet the first season. The water gardens constituted an especially good display, the color and size of the water lilies being magnificent. The floral display on the section between the palaces of Agriculture and Horticulture was very handsome as were those on the west and north sides of the palace of Agriculture. The displays of cannas and gladioli scattered throughout the various sections were of great extent and beauty. The judges reported that the canna display was the greatest and in every way the best ever made. The lawns were much admired. All of the various lawn grass mixtures of seed used and which were supplied by exhibitors proved successful, making fine velvety slopes.

A feature of the display on the west side of the palace of Agriculture was a collection of wild indigenous flowers and shrubs which had been gathered near the grounds of the Exposition. This collection made a handsome garden which was one of the beauty spots of Agriculture Hill.

The Great Floral Clock:

The centerpiece of the display north of the palace of Agriculture was the great floral clock. This clock which was located on the steep slope leading up to the main entrance of the building was one of the most noticeable and popular features of the exposition grounds and attracted millions of visitors. Its dial was one hundred and twelve feet in diameter and its great hand weighed twenty-five hundred pounds. The surface of the clock was completely set in bedding plants and flowers. The central portion of the dial was planted with verbenas, the ground work of the outer circle in centaurea, and the hour numbers, which were about fifteen feet high, in coleus. The finished effect was striking, handsome and clean-cut, the dial design, features and details being perfect in every particular and being distinguishable from a great distance. Even when caught by the autumn frosts, the plants employed continued to appear to advantage, serving their purpose excellently and admirably to the end of the Exposition.

The clock was by far the largest ever made and constituted the most unique horticultural feature ever designed and executed. Its size, formation, details and mechanism proved to be a never diminishing novelty. The clock was propelled by electricity; its operations were mechanically perfect and its performance remarkably accurate. It became the popular time piece of the exposition grounds, the tones of its striking bell which weighed seven thousand pounds penetrating melodiously for miles. The works of the clock which with all of its mechanical parts were supplied as an exhibit of the department of manufactures were located in a handsome miniature pavilion at the head of the dial, back of the figure twelve. Its hands were actuated by means of underground rods which at proper intervals transmitted the impulse of the mechanism. A handsome glass enclosed case at the left of the controlling pavilion contained an immense hour glass which held one hundred pounds of sand and was mechanically turned half a revolution each hour, permitting the sand to flow from one section of the glass to the other accurately and uninterruptedly. On the opposite side of the directing pavilion in a similar case was the bell the operations of which were fully revealed to the public. The bell struck the hour and the half hour; upon the first stroke of each hour and simultaneously with the turning of the great hour glass, the doors of the operating pavilion swung open and exposed the mechanism which controlled the striking and operated the hands, closing immediately upon the last stroke of the bell. When the time for the hour to strike arrived there was always a great crowd waiting to witness the unique performance. At night the clock was brilliantly illuminated; approximately 1,000 incandescent electric

lamps were required for this purpose.

On the whole the outside horticultural display was an extraordinarily popular and experimental success. So far as can be learned it represented the first attempt at making a general and complete landscape effect without purchasing shrubs, trees, bulbs --depending exclusively upon exhibitors to supply the stock needed, and so arranging the varieties as to bring about attractive and effective unity.

The Flower Show:

By an arrangement entered into by the chief of the department of Horticulture and a number of the prominent florists and others interested in the growth of flowers, a plan was worked out for an exhibit of roses, carnations, chrysanthemums and other flowers between the days of November 7th and 12th, 1904. In order to interest many growers it was deemed advisable to offer premiums. About one hundred of those most deeply interested in floriculture joined in a guarantee of \$7,000, and a premium list offering that amount of money was issued. An executive committee to conduct the details of the show was organized and included the following representative florists and floriculturist: Philip Breitmeyer; Elmer D. Smith; E. G. Hill; W. N. Rudd; Leonard Kill; William Trelease; J. C. Vaughan, chairman; J. B. Deamud, assistant to chairman and auditor; W. N. Rudd, treasurer; Philip Hauswirth, manager. An admission charge of 25 cents was decided upon, the proceeds of which were to be applied to repayment of the fund guaranteed and expended in premiums.

The substantial inducement in prizes offered insured many participants in the flower show and a representative exhibition in all of the classes of the competition. These were: cut flowers: chrysanthemums, seedling chrysanthemums, orchids, roses, seedling roses, carnations, seedling carnations; plants: chrysanthemums, orchids, miscellaneous; floral arrangements: roses, chrysanthemums; general display: all plants and flowers and special exhibits not otherwise provided for.

The show proved to be a great success and drew favorable comment from all of the large number of visitors. It was indeed one of the most attractive features of the Exposition. The display of chrysanthemums was very handsome and extensive, and the flowers were all well grown; the numerous exhibits of roses and carnations were unusually fine. The total receipts from admissions proved to be sufficient to pay the premiums and other expenses.

Several of the foreign countries, including France, Germany, Great Britain, Mexico and Japan, presented large numbers of plants and ornamental trees and shrubs. The grounds about the French, British, Mexican, Japanese and Cuban pavilions were handsomely ornamented with trees, shrubs, plants and flowers, while at the German pavilion a considerable number of large and well grown rhododendrons and bay trees were displayed. The landscape and horticultural features of the French, English and Japanese gardens were especially creditable and attractive. In the French garden a unique feature was the adaptation of fruit trees to ornamental purposes by training limbs into set designs. The formal treatment of the English garden and shrubbery was very distinctive. In addition to the horticultural decorations about its pavilion Mexico made an elaborate display of cacti in the regular horticultural exhibit south of the palace of Agriculture.

Systems and apparatus of horticulture in its various branches of viticulture, fruit culture, floriculture and arboriculture were well represented. The United States and foreign countries contributed to this interesting and important section of the horticultural exhibit. Among the foreign countries represented were France, Great Britain, Germany, Italy, Japan, China, and Nicaragua. The spraying machinery and the tools exhibited by a number of French firms were of a high order of merit and proved very interesting.

CHAPTER XII

LIVE STOCK

Exposition Premiums Nearly \$300,000—Special Prizes Nearly \$200,000—Breeding Districts of the World Represented—Over 20,000 Awards—Appreciation Expressed by Exhibitors—Live Stock Forum—Live Stock Congress Hall - New Standards of Quality—The Horse Parades

THE Live Stock exhibit of the Universal Exposition of 1904 surpassed any previous display of similar character. The exposition management realized from the beginning the opportunity which a universal exposition held in the center of the greatest livestock producing territory offered. The standing committee on Agriculture of the Board of Directors, appointed in 1901, gave much attention to the subject of livestock and a fitting exhibit. It was early decided that a suitable and sufficient section of the exposition site be set aside and that a substantial appropriation of money be voted for the organization and conduct of the exhibit. Later a special department of the Exposition was created for Live Stock, to be presided over by a chief with proper authority, for the first time in the history of expositions. So impressed were the committee and the management after a full consideration of the subject that it was decided to authorize the offer of money prizes for superior exhibits of livestock, to the extent of approximately \$250,000. The offering was later increased to \$282,136 and a graded prize list presenting this sum was published and distributed. This significant action was taken after consultation with representatives of the livestock industry throughout the country. The prize money far surpassed all precedents. Chicago probably has profited more from the livestock industry than any other center in the world. The World's Columbian Exposition of 1893 awarded \$132,725 in prizes for livestock exhibits. The offer made by the Universal Exposition of 1904 in St. Louis was more than double that amount. It was made in full realization of the importance of the livestock industry to the world and to the end that this industry might fittingly share in the benefits which would come to all other lines of activity through the Exposition.

Prizes Beyond Precedent:

The action of the exposition management was appreciated by the livestock organizations, domestic and foreign. National, state and other livestock associations voted additional special prizes for exhibits, to be awarded in connection with those given by the Exposition. These cash offers reached an aggregate amount of almost two hundred thousand dollars, which with further state and

national money pledges made a grand total of considerably over half a million dollars offered.

Five great shows were assembled and presented in organized succession: (1) horses; (2) cattle; (3) southern breeding cattle; (4) sheep and swine; (5) poultry, pigeons and pet stock. Participating in these shows were forty states and five foreign countries. All of the breeding districts of the world in which the raising of pure-bred stock receives any considerable attention were represented in the competing animals. Over two thousand exhibitors participated with a total of 21,589 animals or exhibits all classified according to rules previously prepared and promulgated. Each animal was judged under the rules and on its merits by men the most capable for such important functions. The whole exhibit was reviewed by hundreds of thousands of visitors, while the various divisions of it were carefully inspected by thousands of breeders and others directly interested. But one opinion has been expressed about the livestock exhibit of the Universal Exposition of 1904. In the words of Charles F. Mills, originally secretary of the department of Live Stock and later chief of the department, "it was the largest, most attractive and useful exhibit of live stock held." Mr. Mills is a recognized authority on livestock and has been for many years a successful manager of stock shows. The number of animals exhibited exceeded by more than one hundred per cent those entered in any previous exhibition.

Of the attitude of the livestock interests toward the exhibit, its organization, conduct and success, it may be said that it could not have been more favorable. The best authorities in the method of conducting livestock shows are the exhibitors who make the displays and who are more deeply interested than any other class in the accommodations supplied for the shelter of their stock, the provisions made for awards and the general conduct of the shows. The domestic and foreign exhibitors of livestock at the World's Fair gave voluntary expression of their hearty approval of the liberal classification of prizes provided. The rules providing for awards received the unqualified commendation of exhibitors. Entire satisfaction with the ample, attractive and comfortable accommodations provided by the Exposition in the way of barns, show ring for the exhibition of horses, cattle, sheep, swine, poultry and pet stock was attested repeatedly.

The Five Shows:

The advantages of the plan adopted of having the several classes of stock exhibited in succession were apparent. This arrangement proved of double benefit. The expanse attending the presentation of five shows, one succeeding another, when compared with the cost of providing five times the accommodations made available for the livestock shows, effected economy. Furthermore, breeders interested in several classes of stock were thus enabled, much to the advantage of all concerned, to critically examine the breeds of horses, cattle, sheep or swine in which they were respectfully interested. This would not have been possible had the four classes of stock been shown at the same time and in different locations. The management under the plan adopted found it possible to give the desired prominence to the respective exhibitions and to provide equal and highly attractive features in the showing of all classes of animals in the Live Stock Forum, a very popular procedure not previously followed. Such unusual prominence as was given the exhibition of sheep and swine would not have been possible had the four classes of stock been assembled and exhibited at the same time.

Exhibitors without exception heartily endorsed the high character of the jurors selected to make the live stock awards at the Exposition. No better evidence of the competency and integrity of these jurors can be presented than the fact that not a single formal protest was filed against one of over twenty thousand prizes awarded in the department of Live Stock. The Exposition could wish for no higher or more satisfactory endorsement of the success attending the efforts of the management than is found in the complimentary resolution adopted by exhibitors, attesting the integrity and popularity of the show of livestock at the Universal Exposition of 1904. A part of one of these resolutions by exhibitors of hogs and sheep is quoted:

Your committee representing the exhibitors of sheep and swine at the World's Fair, to whom was referred the matter of formulating an expression of the breeders showing sheep, goats and hogs, concerning the accommodations provided and the manner of conducting the show, beg leave to submit the following as the sense of this gathering:

First, that the Exposition has far exceeded our expectations in the good barns, large show ring and accommodations provided for exhibiting hogs and sheep to the best advantage, and that too much praise cannot be bestowed upon the management for such excellent and entirely satisfactory conveniences, which far surpass any heretofore provided for a livestock show.

Second, that the prizes of the World's Fair in liberality greatly exceed those offered at any previous livestock show, and the number of rings and unusual range of competition provided have never been nearly approached.

Third, that the high character and ability of the jurors appointed to judge our stock place the World's Fair show much in advance of the largest and most successful home or foreign stock shows.

Resolutions of similar and even more complimentary nature were passed by the exhibitors of other classes of stock. These resolutions also included congratulatory reference to the department of Live Stock, the Division of Exhibits and the general administration of the Exposition. The plans, classification, allotment of prize funds and the formation of rules and methods of handling the shows were prepared by F. D. Coburn, original chief of the department of Live Stock. Mr. Coburn, long famous as secretary of the Department of Agriculture of the State of Kansas, directed the affairs of the department until April 15, 1904, when he was forced on account of ill health to withdraw and turn over the arduous work to Mr. Mills. Two more fit or capable men for the preparation and conduct of a great livestock exhibit could not be found. What Mr. Coburn planned and inaugurated, Mr. Mills perfected, elaborated and carried out. With the combined wisdom and energy of these two men-Mr. Coburn still continued as honorary chief of the department it was impossible that anything less than the great success recorded be attained. From the report of Mr. Mills, the following review of the principal features of the exhibit is taken:

In the consideration of the plans and the promotion of the work in connection with the holding of the exhibition of livestock at the Universal Exposition of 1904, the purpose was to provide accommodations and opportunity for complete displays of the useful and recognized breeds of domestic animals and fowls and their exhibition and judging to the best advantage.

The appropriation of over \$280,000 of the funds of the Exposition for prizes of livestock, to which had been added over \$176,000 by states and associations of breeders, made possible and assured in each class a presentation of and a competition between the best specimens in existence-an assemblage of quality that made possible the determination of

the present summit level of human skill and endeavor in animal development.

Grounds and Buildings:

The southwest corner of the Exposition grounds, an area of about forty acres of high and sloping land, was assigned for the livestock exhibit. Upon this section were erected the extensive series of barns and other buildings necessary for the care and housing of the stock and the arrangement and conduct of the various shows.

The layout of the grounds and buildings of the department of Live Stock as completed presented the following principal structures and features: Live Stock Forum - an elliptical arena in which the animals were exhibited and inspected for award, covering an area of 250x500 feet; Live Stock Congress Hall, for the accommodation of conventions, demonstrations, and the representatives of livestock associations and the press; general working and administration headquarters including a sale and show arena 75x35 feet; Live Stock Review Park, 200x45 feet, for public exhibition under close inspection of animals after they had been examined by judges and given award; Barns 200x50 feet each, providing 2,650 stalls 5x10, and 250 box stalls 10x10 feet.

In the distribution of cash prizes, the number and value of the respective breeds to the entire animal industry was carefully and analytically considered, and the amount set apart to each of the utility breeds was apportioned accordingly. The statistics furnished by the secretaries of the pedigree record association were used as a basis for making the distribution, which was conceded by the unprejudiced to be proper and equitable. This marked departure from the general custom of giving all breeds the same classification and amount in prizes when first announced created not a little discussion and some feeling of resentment among the owners of breeds assigned to the second and third classes. The opposition to the rating of breeds somewhat reduced the exhibits of some of the minor breeds, which the more forcibly emphasized the popularity of the leading breeds, that were without exception strongly represented in numbers and quality. The prize list as arranged was unique, and its publication marked an important departure in the science involved in the preparation of a classification and the proper distribution of prizes for exhibits of livestock. The Universal Exposition of 1904 has received unmeasured congratulations from the most eminent authorities in such matters on the unquestioned standard provided for the conduct of livestock exhibitions which was generally considered to be far in advance of any heretofore established. The same care that was devoted to the preparation of the prize list was later applied in the selection of jurors to make the livestock awards.

Policy of Prizes:

The very general and deep interest manifested in the livestock shows of the Exposition on the part of breeders and their organizations is emphasized in the most convincing manner by the large amounts pledged and paid in special prizes to the breeds in which the donors were respectively interested. There is no better test of a man's confidence and interest in an undertaking than the extent of his investments therein. That the breeders and the national live stock organizations of this and other countries, and including World's Fair state commissions, were fully in earnest in their determination to make the livestock exhibit at the Universal Exposition the largest and best on record is demonstrated in the large amounts provided for special prizes which exceeded in the aggregate one hundred and eighty thousand dollars or sixty-five percent of the total amount provided by the Exposition for its regular classification of cash prizes.

The offer of over ten thousand dollars in cash for special prizes by a leading national live stock association, and many smaller by less prominent and wealthy organizations, had not a little influence in contributing to the unprecedented success that attended the exhibits of livestock at the Exposition, and too much credit cannot be given these very ef-

fective agencies which created such a deep interest in this record breaking show. One state commission appropriated one hundred thousand dollars to encourage the breeders of the state to make a showing at the Universal Exposition worthy of the occasion. One herd book association offered and paid more than ten thousand dollars in cash prizes to ensure the remarkable showing made by its patrons. On one variety of poultry seven hundred and forty-five dollars in prizes was offered and paid by specialty clubs representing the breed, in addition to the regular exposition prize fund of one hundred dollars, making a grand total of eight hundred and forty-five dollars in cash offerings for a single variety of chicken.

Canada duplicated prizes won by its livestock exhibitors, in total, \$20,522. Indiana paid freight on the livestock exhibits from that state. Other states furnished special funds for prizes and expenses as follows: Illinois, \$15,000; Iowa, \$12,000; Kansas, \$10,000; Kentucky, \$7,500; Missouri, \$100,000; Nebraska, \$2,300; Oklahoma, \$500; Wisconsin, \$10,000. Below is a summary of the exposition and special cash prizes offered for exhibits. If to these amounts should be added prizes provided by foreign countries and breeders' associations not reporting to the department of Live Stock, the total would considerably exceed half a million dollars.

STOCK	Prizes		Totals
	Exposition	Special	
Horses	\$94,300.00	\$22,480.00	\$116,780.00
Cattle.....	85,520.00	46,206.25	131,726.25
Sheep.....	44,390.00	18,396.00	62,786.00
Swine.....	30,311.00	19,898.00	50,209.00
Poultry	13,134.00	9,556.00	22,690.00
Pigeons.....	3,375.00	.....	3,375.00
Dogs	8,880.00	5,085.00	13,965.00
Cats.....	1,320.00	.....	1,320.00
Rabbits, Hares	906.00	.....	906.00
State and National .....	.....	57,300.00	57,300.00
	\$282,136.00	\$178,921.25	\$461,057.25

The Program and the Exhibits:

The exhibitions of livestock in the several divisions were held as follows:

Division A-Horses, Asses and Mules; Monday, August 22, to Saturday, September 3, 1904, inclusive.

Division B - Cattle; Monday, September 12, to Saturday, September 24, 1904, inclusive.

Division C-Sheep, and D-Swine; Monday, October 3, to Saturday, October 16, 1904, inclusive.

Division E-Poultry, Pigeons and Pet Stock; Monday, October 24, to Saturday, November 6, 1904, inclusive.

Division F-Dogs and Cats; Tuesday, October 25, to Friday, October 28, 1904, inclusive.

Division G-Southern Breeding Cattle; Monday, November 7, to Saturday, November 12, 1904, inclusive.

Division H-Carload lots of Cattle; Monday, November 7, to Saturday, November 12, 1904, inclusive.

The universality of the livestock shows of the Exposition is amply demonstrated by the displays made of all the improved breeds of domestic animals, creditably representing exhibitors and breeders of animals, the residents of seven foreign nations and forty states and territories: Foreign-Austria, Belgium, Canada, France, Germany, Great Britain and Morocco; States-Alabama, Arkansas, California, Colorado, Connecticut, District of Columbia, Georgia, Illinois, Indiana, Indian Territory, Iowa, Kansas, Kentucky, Maine, Maryland,

Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode island, South Carolina, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, and Wisconsin.

The animals bred abroad that were exhibited by the residents of the United States, if credited to the place of their birth, would largely increase the number of foreign countries thus represented at the Exposition.

The total number of breeders, exhibitors and animals represented at the World's Fair in the several divisions is given in the following table, viz.:

DIVISIONS...	Breeds	Number Animals Entered				Number	
		Male	Female	*Others	Totals	Breeders	Exhibitors
A.....	Horses	667	536	611	2,495	404	506
B.....	Cattle	851	1,617	1,078	3,446	603	268
C.....	Sheep	1,004	1,212	516	2,732	256	182
D.....	Swine	874	1,337	401	2,612	343	220
E.....	Poultry	3,128	5,472		8,600	732	612
E.....	Pigeons	604	763		1,367	2	78
E.....	Rabbits	30	56		85	28	22
F.....	Dogs	131	135		266	117	99

*Geldings, Steers, Wethers and Barrows.

The value of the livestock exhibited at the Exposition cannot be even partially estimated. It constituted the best of the good blood that for the future will be largely drawn upon for improving the choicest of our studs, herds and flocks, and for grading up the entire livestock industry valued at over three thousand millions of dollars. This low official estimate is based on the market rates of all classes of stock, including the very inferior to the better grades. In the ordinary course of breeding with good average results the descendants in the not distant future of the animals exhibited at the World's Fair will number millions. The exhibits presented at St. Louis provided new standards of quality in form and finish far surpassing any heretofore attained. The up-to-date types and the strains that insure the highest degree of profit in production were emphasized at this show as never before in the history of breeding.

Horses:

The number of horses exhibited was far more than double that registered at any preceding fair or livestock show and reached nearly twenty-five hundred head; viz., 2,495. The liberal prizes and complete classification provided for all the recognized breeds and types of horses for breeding and commercial purposes and interested horsemen to the limit. There was the most hearty and resolute endeavor on the part of the leading representatives of the industry to make the horse show in every way worthy of such an unusual occasion. The classification of the Exposition provided not only for the exhibits of all the recognized breeds of horses, but for the various classes of horses used in the army, on the streets of our cities, and on the farm. The Universal Exposition of 1904 has the credit for first providing specific standards for the exhibition of the artillery, cavalry, coach, draft, express, omnibus and fire department horse. The published standards provided therefore, and the wide attention thus directed to those specific types served an excellent purpose not only in emphasizing the exacting demands of the trade, but in impressing upon the breeders the profit in providing the market with such high priced and much desired horses.

The prizes offered for exhibits of the "business horses in harness" brought out a large and very creditable display. The parade of the horses and vehicles used by business men in the various trades of our cities, notably of St. Louis, was large and impressive.

The horse show parade which proceeded through the avenues of the Exposition was

imposing and attracted an unusually large and interested crowd of visitors. Much credit for the successful manner in which all of the events of the horse show were conducted is due to O. P. Updegraff of Topeka, Kansas, superintendent in immediate charge of these displays.

Cattle:

The exhibit of cattle was most creditable to that industry. In number the exhibit had not been nearly approached at any former exposition. In the breeding classes entries were made of 851 bulls and 1,517 cows and heifers, making a total for the fifteen breeds represented of 2,368 head. In the classes for fat cattle, consisting of pure bred and grade steers or fat heifers, entries were made of 1,078 head. The calves taking part in the demonstration of cows, the market types of cattle and the nurse cows brought to the Exposition with the exhibits of breeding cattle and consisting of 575 head, made the grand aggregate of all kinds that participated in the World's Fair cattle show number 4,021 head. This number included the representative exhibits of southern breeding cattle and of car load cattle presented in separate exhibitions.

The high average quality of the displays of cattle was fully in keeping with the unprecedented number exhibited. The cattle on exhibition that in quality, breeding and finish were not highly creditable to a universal exposition were the rare exception. The best breeders, the owners of the best-known herds of the beef and dairy types of cattle have never been more strongly represented in the show ring with specimens that had been given all the care and skill known in fitting stock for display. The superior prizes and the unusual importance of the occasion to breeders ambitious for future prominence and trade had stimulated exhibitors to the fullest limit in their endeavor to present the most perfect specimens obtainable. There was notable complimentary reference on the part of jurors and visitors to the superb fitting and unusual show yard bloom of the cattle presented.

The exhibit of the market classes and grades of cattle by the animal husbandry department of the University of Illinois consisted of fifty head. This was the first display of its kind ever made and in point of interest and benefit to the breeders and dealers in cattle was not second to any of the unusual attractions of the great cattle show of the Exposition. This exhibit was awarded the highest honors by the international jury. As previously indicated the exhibits of cattle were presented in three distinct shows, all of which were most successfully conducted under the immediate supervision of Charles R. Thomas of Kansas City, Mo., superintendent in charge of exhibits of cattle.

Sheep and Swine:

The exhibit of sheep was the largest on record and of exceptionally high quality. All the home and foreign sheep breeding districts were strongly represented and with few exceptions the leading flocks of all countries contributed specimens especially fitted for the Exposition. The eighteen classes provided for exhibits of the various breeds of sheep were with few exceptions most creditably represented in the high average quality and the large number of head displayed. The number of sheep entered in the breeding classes was as follows: rams 1,004; ewes 1,212; a total of 2,216. There were 257 head of pure bred and grade wethers exhibited and 259 head of goats and sheep included in the public sales, making a grand total of 2,732 head of sheep and goats on the exposition grounds. The Angora goats made the largest exhibit of any class in the division. This exhibit attracted unusual attention on account of the large number displayed and the high quality of the show. The first provision made at a world's fair for a display of milch goats brought to the Exposition some choice imported and home bred specimens of that valuable type. In point of number of entries the breeds of sheep represented ranked as follows: First, Merinos; followed by the Cotswold, Rambouillet, Shropshire, Oxford, Southdown, Hampshire, Cheviot, Dorset, Leicester, Lincoln, Suffolk, Tunis, Kent or Romney Marsh, and Persian. The sheep show

was presented under the direction of John L. Thompson of Gas City, Indiana, superintendent of these exhibits.

The exhibit of swine has never been surpassed in extent of the high-class animals displayed. The leading breeds were all represented and but few of the prominent breeders were not included in the exhibit. The eleven breeds displayed included exhibits from all the leading pork producing sections of the United States and Canada. The leading breeds of English origin were represented by very superior specimens from the noted herds of Great Britain. The number of swine entered in the breeding classes is as follows: boars 874; sows 1,337; a total of 2,211. There were 401 head of pure bred and grade barrows exhibited, making a grand total of 2,612 head of hogs on the exposition grounds. In point of number of entries the breeds of swine represented were as follows: Berkshires, followed by Duroc Jerseys, Poland China, Chester White, Essex, Large Yorkshire, Tamworth, Victoria, Cheshire, Hampshire and Suffolk. The conduct of the swine exhibit was in every way successful, it being under the direction of George S. Prine of Oskaloosa, Iowa, superintendent.

Poultry and Pet Stock:

The exhibit of poultry provided a new and advanced standard in all that pertains to the fullest measure of success in an exhibition of this character. The accommodations provided for the exhibition of poultry were first class so far as relates to the cooping arrangements. The poultry show was assembled and conducted under the immediate supervision of T. E. Orr of Beaver, Pennsylvania.

The exhibit of pigeons was of unusually high average quality and in numbers most creditable. The pigeon show was under the supervision of Henry Tieman of Baltimore, Maryland.

The dog show was held on October 25-26, 1904, under the direction of James A. Graham of St. Louis. Mr. Graham's management proved eminently successful and satisfactory. The show was planned and conducted in the interest of the breeders of purebred dogs and for the purpose of promoting dog breeding as an industry worthy of encouragement and recognition similar to that given other kinds of animals. The classification embraced all the established breeds of record numbering seventy-four, for which cash prizes were offered to the amount of \$8,800. The competition provided for exhibitors in the open class and all previous prize winners properly entered were allowed to show under the same rules and conditions announced for all other classes of livestock. There were creditable representatives of thirty-four different breeds of dogs exhibited, viz.: Airedale Terriers, Beagles, Black and Tan Terriers, Boston Terriers, Bull Dogs, Bull Terriers, Chesapeake Bay Dogs, Chihuahuas, Collies, English Toy Spaniels, Black and Tan, Orange and White and Tricolors, Fox Hounds (American), Fox Terriers, Great Danes, Greyhounds, Irish Terriers, Japanese Spaniels, King Charles Spaniels, Maltese Terriers, Pointers, Poodles (curly), Pugs, Scottish Terriers, English Setters, Gordon Setters, Irish Setters, Skye Terriers, Cocker Spaniels, Irish Water Spaniels, St. Bernard (rough), St. Bernard (smooth), Toy Poodles and Russian Wolfhounds. The recognition by the Exposition of the dog breeding industry as worthy of being placed on the same plane with all other pure breeds of domestic animals exhibited at expositions proved to be a progressive innovation which received the hearty approval and support of a number of the most extensive and successful breeders of high-class dogs who advocated such exhibitions on merit and according to age.

A complete classification for all the recognized breeds of cats was widely published by the Exposition and rules satisfactory to the officers of the leading cat clubs of the United States and Canada were provided for the exhibition. A prize fund of \$1,320 was appropriated for the thirty-three breeds of competitions of cats. The Exposition made an earnest effort to interest the promoters of the cat industry in making an exhibition of pure bred and recorded cats. The dates appointed for the cat show—October 25, 26, 27 and 28, 1904, were, however, considered too early in the season to permit exhibition of cats in show form. The

lack of interest of cat fanciers in a cat show for the special purpose of encouraging breeders of cats prompted the management to abandon the show.

The proposed exhibit of cats was the only show of livestock provided for by the Exposition that was not held as planned.

The exhibit of Belgian hares and rabbits attracted much attention and highly creditable comment from visitors. It was conducted under the supervision of R. J. Finley of Mexico, Missouri.

Parades of Live Stock:

The programs for the exhibition in the Live Stock Forum of the various breeds of horses, cattle, sheep and swine provided for a number of new and striking features in the way of effective displays as well as the usual form of assembling the stock by ages for examination by the jurors. Exhibitors cheerfully responded to the invitation of the department to participate in the parades and displays, which had a marked effect in maintaining a lively interest in the shows during the intervals between the hours of judging. The additional displays and parades in the Arena from time-to-time enabled visitors to examine the large number of very superior animals assembled to the best advantage.

On several occasions, parades of horses were made through the most prominent avenues of the Exposition. These attracted the visitors from the various exhibit palaces to the avenues on which the horses were passing. There was no lack of unanimity in the opinion of the observers that the parade of horses through the main avenues of the exposition grounds on Tuesday, August 27, 1904, was one of the most attractive and inspiring of the many unique and entertaining street pageants of various kinds presented to the World's Fair visitors. The day was perfect, the grounds thronged with visitors attracted by the published announcement of the first show of livestock, and the matchless exhibit of nearly two thousand head of spirited horses brought forth every evidence of full appreciation of the importance of the occasion to the equine world. The royal trappings added to the pomp and magnificence of the beautiful display of horses in charge of elated and handsomely attired home and foreign grooms. The music of home and foreign bands at the head and at intervals down the long column of horses that extended for miles through the various exposition avenues made a scene not soon to be forgotten. Thousands of spectators stood surprised and charmed on either side of the passing line of what comprised the best specimens of all the breeds and by far the largest and most valuable collection of horses ever seen together.

Organization and Regulations:

The completeness and effectiveness of the rules and regulations prepared for the conduct of the livestock shows amply provided for every emergency that developed. The absence of a single protest on the part of an exhibitor and the unanimous and unqualified endorsement of the rules and regulations by exhibitors, jurors and the representatives of the various national live stock associations in the immediate charge of the breed shows evinced the adaptability to all requirements for the successful conduct of a show of the magnitude and character for which they were prepared. Inquiries from abroad concerning the United States quarantine rules and regulations and their application to animals brought to America for exhibition at the World's Fair made it necessary in March 1903, to send the secretary of the department of Live Stock to Washington to confer with the authorities on this important subject. As a result, the secretary of agriculture and the secretary of the treasury at once issued rules which greatly facilitated the bringing into this country of livestock for exhibition.

The best show yard talent was secured to assemble and display to the best advantage in the Live Stock Forum the competitive exhibits. The interest of exhibitors, the entertainment, as well as the instruction of the breeders and visitors in attendance, were constantly kept in mind by the division and breed superintendents in immediate charge of displays. The division superinten-

dents appointed to assist in the conduct of the exhibit of horses, sheep, swine, poultry and dogs were men well and favorably known for their successful experience in the conduct of the leading livestock shows.

The division superintendents were ably assisted by secretaries of the pedigree record associations, executive officers of respective breed organizations and men exceptionally well versed in show yard practice. The breed superintendents are entitled to no small degree of the credit for the perfection that prevailed in the show ring management; each of them proved a master in the prompt assembling the stock in the show ring, in the displaying of the attractive exhibits to the advantage for examination, and in the accuracy of posting the awards in the entry books. The members of the show ring staff of the department of Live Stock discharged their duties in a highly creditable manner. The gentlemen who composed the ring staff were as follows: general superintendent, J. B. Dinsmore, Sutton, Neb.; chief marshal of the ring, H. H. Hinds, Stanton, Mich.; assistant marshal, A.G. Madden, Kingman, IN; assistant marshal, R. E. See, Jefferson City, MO.; secretary, Fred H. Rankin, Urbana, IL; entry clerk, Fred O. Bronson, Toronto, KS.

The published and widely distributed rules of the Exposition concerning the health of the animals intended for exhibition at the World's Fair provided that animals known to be affected by or as having been exposed to any contagious disease within thirty days next prior to August 20, 1904, would not be admitted to the exposition grounds. Exhibitors making entries of livestock for exhibition at the World's Fair were advised before shipment to St. Louis that all animals before admission to the exposition grounds would be examined and must pass satisfactory veterinary inspection as an additional safeguard against infectious or contagious diseases. The livestock exhibited reached the exposition grounds in an unusually healthy and satisfactory condition. The veterinary surgeon of the department made a careful daily inspection of the grounds, stables, stalls, pens, and each morning filed a report in writing certifying to the condition of the animals on exhibition. The division and breed superintendents were constantly on the alert to discover and report any indications of unhealthy conditions among the animals on exhibition. The vigilance of Dr. T. E. White, the veterinary surgeon of the department, was deserving of special commendation. Ample facilities were provided for the supply and distribution of feed and water for the livestock exhibits. At the end on the inside of each barn troughs were located and supplied by city water mains. Between the barns, large water troughs were located midway from the ends of the barns and these troughs were supplied by the city water mains. Adjoining the outside troughs between the barns, platforms were located on which to wash the stock.

A feed warehouse on the livestock site adjoining the railroad track was well supplied with a good quality of straw, feed and forage of all kinds during the continuance of the livestock shows. The contract made by the Exposition provided that the best quality of straw, feed and forage should be delivered to exhibitors at their respective barns at the lowest current market rates in St. Louis for goods of like grade. In order to further protect exhibitors, they were permitted to bring to the Exposition with their stock a supply of forage and grain and many availed themselves of this privilege. Exhibitors were also permitted to buy feed in the open market.

There was less complaint than usual at similar exhibitions concerning the price and quality of feed furnished and with scarcely an exception the stock men expressed themselves as well pleased with the arrangements provided by the Exposition for the comfort of the stock on exhibition.

Live Stock Jurors:

The high character and qualifications of the jurors making the live stock awards at the Exposition were fully conceded by the exhibitors and the discriminating breeders in attendance. The jurors appointed, with few exceptions, had established reputations as successful breeders and were chosen for their especial qualifications and intimate knowledge of the characteristics and qualities that make valuable the breeds upon which they were invited to give judgment. Each juror fully appreciated the responsibility he had assumed in accepting appointment and the value and prestige attending the awards he made. The attention of all was seriously directed to the unprecedented assemblage of livestock of the best quality upon which they were to pass, and

to the fact that their awards would largely determine the standard of attainment that had been reached in the development of the improved breeds of domestic animals. The jurors accepted the invitation of the department to hold meetings each morning at the shows in which they were interested and before entering upon their duties in the Live Stock Forum they freely discussed all matters relating to breed, type conformation, quality, show form, and bloom, and the best method of showing to advantage the stock exhibited. All other matters received due attention that would aid exhibitors and visitors in obtaining all possible information concerning the standard adopted for making awards.

The chief of the department was fully impressed with the conviction that the success of a competitive exhibition of livestock rested entirely upon the integrity of the awards. It is an unmeasured pleasure to place upon this record the well-established fact that the jurors sustained their reputation for probity and that there was no occasion for the slightest suspicion of any lack of rectitude or lofty ambition on the part of anyone to faithfully discharge the duties of judge. The Universal Exposition of 1904 made a most enviable record for just and competent live stock awards.

Cash Prizes Awarded:

The exhibitors residing in the several states and foreign countries received on their exhibits of livestock cash prizes in division and in total as follows:

State or Foreign Country	Horses	Cattle	Sheep	Swine	Poultry	Pigeons	Dogs	Hares	Total
Austria						31.00			31.00
Belgium	30.00								30.00
Canada	990.00	900.00	12,676.00	2,903.00	3,051.00	6.00			20,526.00
Germany	1,200.00								1,200.00
Great Britain			628.00						628.00
Alabama					14.00				14.00
Arkansas					36.00				36.00
California			1,100.00		52.00	15.00			1,167.00
Colorado		250.00							250.00
Connecticut		1,020.00			147.00		44.00		1,211.00
Dist. Columbia			75.00			46.00			121.00
Georgia					112.00			4.00	116.00
Illinois	23,735.00	7,265.00	3,318.00	6,030.00	939.00	215.00	265.90		41,767.90
Indiana	3,065.00	6,980.00	2,175.00	2,212.00	278.00	47.00	28.00		14,785.00
Indian Territory		2,296.20							2,296.20
Iowa	3,230.00	5,205.00	50.00	2,495.00	150.00		12.00		11,142.00
Kansas	1,440.00	1,275.00	150.00	2,303.00	119.00				5,287.00
Kentucky	11,515.00	1,494.00	342.00	674.00	47.00	18.00			14,090.00
Maine				500.00	34.00				534.00
Maryland			705.00			108.00			813.00
Massachusetts		1,310.00			195.00	144.00			1,649.00
Michigan		95.00	1,824.00		169.00	136.00	6.00		2,230.00
Minnesota	195.00	2,080.00		1,298.00	117.00				3,690.00
Mississippi					4.00				4.00
Missouri	15,105.00	10,405.00	645.00	3,765.00	772.00	162.00	580.00	250.00	31,684.00
Nebraska	315.00	135.00	1,118.00	977.00	46.00				2,591.00
Nevada		25.00							25.00
New Hampshire		455.00			40.00				495.00
New Jersey		2,050.00	660.00		268.00	20.00	94.00	24.00	3,116.00
New Mexico			175.00						175.00
New York	175.00	4,320.00	3,238.00	190.00	1,193.00	134.00	155.00	34.00	9,439.00
North Carolina		300.00			52.00				352.00
Ohio	740.00	5,021.00	4,236.00	3,700.00	561.00	190.00	221.00	6.00	14,675.00
Oklahoma		68.80							68.80
Oregon		440.00	745.00						1,185.00
Pennsylvania		1,610.00	365.00	25.00	593.00	113.00	186.00		2,892.00
Rhode Island					47.00				47.00
South Carolina								20.00	20.00
Tennessee	675.00	43.00		80.00	22.00				820.00
Texas		8,822.30	1,480.00		24.00		59.00		10,385.30
Utah			87.00						87.00
Vermont	1,315.00								1,315.00
Washington			120.00						120.00
West Virginia		40.00			4.00		14.00		58.00
Wisconsin	3,030.00	1,105.00	4,861.00	709.00	903.00	348.00	12.00		10,968.00
Totals	66,755.00	65,010.30	40,773.00	27,861.00	9,989.00	1,733.00	1,676.90	338.00	214,136.20

A very large percentage of the foreign-bred stock exhibited at the World's Fair had previous to the Exposition been purchased by Americana, and the awards thereto are credited in the preceding table to the states in which the domestic owners reside. The cash prizes awarded by the Exposition to the home and foreign exhibitors for all classes of livestock and poultry effectively illustrated the wide distribution of honors and the universality of the competition.

The Universal Exposition of 1904 was the first to provide premier champion prizes for exhibits of livestock. These honors were determined by the best showing made or single animals in the respective sections and as shown by the largest aggregate amount awarded to single animals owned by one exhibitor, or the largest aggregate amount awarded to single animals bred by any one breeder represented. The premier champion prizes, the highest and most coveted honors of the livestock show of the Exposition, in point of number entitled the states and nations to precedence as follows: Illinois, 19; Canada, 12; Ohio, 11; Indiana, 10; Missouri, 7; Iowa, 5; Kentucky, 5; New York, 5; Wisconsin, 4; England, 3; Minnesota, 3; California, 2; Kansas, 2; Oregon, 2, and one each to Connecticut, Michigan, Massachusetts, North Dakota, New Jersey and Pennsylvania.

At the close of the respective shows the premier champion prizes were awarded by President Francis and Director of Exhibits Skiff in the Live Stock Forum. Their presentation was attended with pageantry worthy of such an unusual occasion. The triumphal parade of the prize animals composing the premier champion studs, herds and flocks before the reviewing stand of the Live Stock Forum was followed by the assembling of the animals before the officials taking part in the presentation of the honors. The concluding ceremony attending the bestowal of these awards included addresses by President Francis and Director of Exhibits Skiff and the delivery of the badges by the chief of the department, after which the exhibits were again paraded around the Live Stock Forum to the barns.

The awards conferred formally indicate the high development attained in the livestock industry throughout the world and notably in America. While definitely registering this improvement the shows at St. Louis spread fresh information as to improved methods, the result of the world's endeavors and experience of the last decade, which will be reflected and felt in still greater improvement and benefit during the coming years. The public more than ever before was brought to definitely realize the extent and importance of the great livestock industry. The far-reaching impetus given advancement in better breeding and feeding will continue to increase rapidly future values in our livestock industry. This increase in value will many times exceed the total expenditure for the construction and maintenance of the entire Exposition which represented so many millions of dollars.

CHAPTER XIII

FORESTRY, FISH AND GAME

**The Aquarium—A Colossal Bird Cage—Yellow Pine Cottage—
House of Hoo-Hoo—Missouri's Live Game Exhibit—Fish Hatching
—New Jersey's Marine Pool—Canada's Family of Beavers—A Col-
orado Hunting Lodge**

MANY evidences illustrative of the active and universal attention being given to the subject of fish and game protection and propagation were presented at the Exposition. Improved methods of fish culture and protection as now applied by respective states and by the United States, also by many foreign nations, were shown, in some cases on an elaborate scale. In a series of aquariums were displayed many varieties and sizes of fish, together with other aquatic animals. The game exhibit included representative groups of living and mounted game, birds and animals representing the entire range of country from the Atlantic to the Pacific and from Canada to the Gulf of Mexico.

The aquarium containing the fishes of America installed under the direction of the United States government was a special feature of the fish and game exhibit. Another very popular attraction was the immense aviary, alive with the plumage and song birds of America, erected and conducted under the direction of the Smithsonian institution. This aviary in the shape of a colossal bird cage and placed in forest setting with trees and shrubbery inside and out, with water for aquatic birds in order to show the specimens as nearly as possible in their natural state, was a unique and notable exhibit indeed.

Evolution of Forestry:

The forestry exhibits included displays from many states and represented great wealth and a remarkable variety of forest resources. A number of states exhibited collections containing over three hundred varieties of timber. The development of the woods of this country had been marked since the preceding World's Fair. A selected display was made of the economic use of valuable trees, of hard woods, of woodenware, cooperage, basketry, forest gums, resins. Effective illustrations of the adaptation of various woods to purposes of construction and decoration were presented.

The exhibits representative of forest preservation and culture were distinguished. The illustrations in forestry were not confined to the policy and experience of the United States but included the systems and experience of other leading nations and proved highly instructive and encouraging to all interested in the future of forests. The improved methods and appliances employed in securing and preparing raw timber for use in all forms, from the railroad tie to the

polished mahogany center table, were illustrated by many examples of widely different products. Woodworking has long been a fine art in the more delicate stages. The universal extension of the manufacture and employment of richly finished woods as a result of the perfection of machinery is one of the notable achievements of modern times. This progress was fully exemplified, as well as the great improvement that has been effected in the preparation and treatment of heavier timber for structural and similar purposes.

In the department of Forestry only three main divisions of the extensive series of exhibits represented were established: appliances and processes used in forestry; products of the cultivation of forests and of forest industries; appliances for gathering wild crops and products obtained. In the department of Fish and Game there were five principal groups of exhibits: hunting equipment; products of hunting; fishing equipment and products; products of fisheries; fish culture.

The displays presented were of such attractive character and were so well installed that one of the most popular exhibit places upon the exposition grounds was that of Forestry and Fish and Game. The success in attracting and holding the interest of the public was notable. It fully demonstrated the fact that the products of the woods and the waters can be successfully assembled in and about a building and so arranged and installed as to actively command and hold public interest and attention; also, that the wholesome tendency to seek pleasure in the midst of and by the inspection and contemplation of the wonders and beauties of nature is growing among the citizenship of our country. The success of the Forestry and Fish and Game exhibit at the Universal Exposition of 1904 suggests the desirability and feasibility of the introduction of such exhibits in convenient form into the principal parks of our greater cities, in the shape of public forest or woodland museums. Few institutions would be more popular or more wholesome in their effect upon the character and education of the public. If the experience at St. Louis may be considered to form a precedent such a museum properly located in the principal park of a great city would shortly establish a new record in attendance for the many splendid popular and scientific museums of the world.

The following brief resume is from the report of the chief of the departments of Forestry and Fish and Game, Tarleton H. Bean.

The Exhibit Palace:

The palace of Forestry and Fish and Game was located south of the Administration building and between it and the Philippine reservation. It covered four acres of ground, its dimensions being 300 by 600 feet. It was of graceful exterior design and was notably well adapted for the exhibits it was constructed to contain. The interior of the building was divided into five great naves extending through its full length the center nave being 85 feet in width. Ample light was given by the windows which occupied the greater portion of each of the four enclosing walls and by monitor windows inserted at frequent intervals in the roof. The facilities for convenience of exhibitors and for public comfort were complete.

The exhibits of forestry presented at the Exposition included what was undoubtedly the most extensive collection and comprehensive range of woods ever assembled. Besides the notable contributions of individual exhibitors, twenty-four states and territories of the Union and twenty-seven foreign countries participated in the forestry exhibit. Lumbermen and all other persons interested in forest industries were surprised by the wealth of woods

available for construction which were exhibited at the Exposition. Collections included log sections, kerfed logs partly finished and partly natural, short planks with the bark on the edges showing both polished and natural wood, lumber samples, the various products of mill work and of factories, economical methods of obtaining the by-products of forest industries, methods of lumbering, logging, transportation, milling, storing, drying, methods of timber preservation and of timber testing.

Noteworthy improvements were reflected in every department of the forestry industry. The rapid advancement in the utilization of cheap woods for railroad ties and other commercial purposes as substitutes for the more valuable species which are now becoming scarce was fully demonstrated. The various processes of preserving timber have been brought much nearer to perfection; the methods of utilizing forest products have undergone a rapid change involving much less destruction of the forests. Forest management has given facilities for controlling fire, insect devastation and wasteful lumbering. Cheap woods are now treated in such a way as to show their great beauty and the utility for many purposes for which they were not at all desirable ten years ago. The new method of turpentineing was illustrated which, when generally applied, will result in the saving of many valuable trees. The modern methods of timber preservation were fully explained by operative exhibits west of the building, and in the Mining Gulch of the Mines and Metallurgy department.

State Exhibits of Forestry:

The principal exhibits in the department of Forestry, aside from certain important individual displays were made by the states and territories of the Union and by foreign nations. The state and territorial exhibits almost without exception were comprehensive and their installation was of the very highest type of excellence. The states and territories participating in the forestry exhibit were: Alaska, Arkansas, California, Georgia, Kentucky, Louisiana, Michigan, Missouri, Mississippi, Montana, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Philippines, Porto Rico, Tennessee, Texas, Virginia, Washington, Wisconsin, Wyoming.

The Pacific coast states, Washington, Oregon and California each made impressive exhibits of big timbers, fir, redwood. California also made an excellent showing of fine woods - 71 varieties in structure form. Oregon included a variety of finished products in its display; also a herbarium of trees, shrubs and flowers. Washington illustrated its lumbering industry and showed a portable house and other finished products made of the timbers of the great trees it grows. In addition to the splendid specimens of planks, cross sections, shown in the exhibit proper, were the great timbers in the unique Washington pavilion which were the marvel of all visitors to the exposition grounds. Alaska presented evidences of its rich forest products in the Alaskan pavilion. The interior West was represented by the exhibits of Montana and Wyoming each of which installed comprehensive collections of its woods, the display of Wyoming being presented in the palace of Agriculture.

The southern states made important exhibits. Arkansas was represented by specimens of finished timber in straight and structural form and by various lumber and forest products, the whole well indicating the range and usefulness of its large variety of woods. Georgia in addition to its display of other woods presented a systematic exhibit of the Georgia pine tree and its products including turpentine and resin. Kentucky made a representative display of its various woods in raw and finished form, the latter section of the display embracing a large variety of well-known articles. Louisiana exhibited its woods and their products, also its turpentine industry.

Missouri made a handsome and comprehensive display of its raw forestry yield and finished woods and other forest products in which the great variety and substantial value of the woods of the state was well shown. Mississippi installed a representative and superior exhibit of natural woods and a variety of finished woods and wood products. North Carolina did likewise, presenting a large and interesting display which included seeds, medicinal

forest plants (313 varieties), resinous products. Tennessee's exhibit embraced a comprehensive collection of 350 specimens of woods of that state, including every variety. Finished products were also shown. Texas exhibited the crude tree and its finished products side by side. Virginia presented an exhibit of raw products and woodenware.

Illustrative of the forestry wealth of the northern central sections of the United States, the displays of Michigan and Wisconsin were notable. Michigan presented a general forestry display of natural and finished products including pulp wood, pulp and paper. An interesting feature of the Michigan exhibit was the illustration of the relation of the waste products of the forest to the development of important salt industries. Wisconsin made an excellent display of forestry, notably of hard woods in raw and finished state. An exhibit of wood-destroying insects was also presented.

The eastern states represented were New Jersey and New York. The state museum of New Jersey installed a systematic forestry exhibit including forestry maps of the state, specimens of woods and an elaborate collection of wood-destroying insects.

New York's Forest Culture:

Possibly the most important of all the state exhibits was that of New York which in addition to an elaborate collective exhibit of forestry, including methods, implements, products and by-products, which was installed in the palace of Forestry and Fish and Game, presented a practical exhibit of forest culture on a plat of ground adjacent to the exhibit palace. Much attention was given by the public and by experts to this growing exhibit. It was described in the following terms in the New York *Tribune*:

A practical demonstration of how New York state is attempting to restore its forests on the denuded, non-agricultural land of the state is one of the most interesting and valuable object lessons at the St. Louis Fair, and one which affords the highest measure of instruction to visitors. The enclosed space at the northeast corner of the Forestry and Fish and Game building is a fully appointed forest nursery and demonstrates the methods employed by the New York forestry commission to supplement nature in preventing the total destruction of the timber supply of New York. Evergreens and hardwood varieties, from the seedling to trees four and five years old, flourish in the miniature forest nursery. The evergreens are cultivated for the timber supply, and the hardwood varieties for furnishing shade.

The first step in forestry nursery is the planting of the seeds. A fertilized seed bed is used, and the seedlings are allowed to remain in the bed until they are two years old. They are then transplanted, placed further apart, and are allowed to grow two more years. The small trees are taken from the nursery and transplanted in land devoid of timber. The trees are placed from four to six feet apart. This is the last step toward restoring a forest. Nature is then depended upon to nourish the young trees and replace what the saw and axe of the lumberman has destroyed.

The trees are planted close together in order that the crowding may prevent spreading of the foliage and compel a tall, straight, cylindrical growth, free from knots and protuberances. If necessary, after eight or ten years, the smaller trees may be culled from the restored forest, but nature adjusts these conditions.

In twenty years, a seedling transplanted from the forest nursery may be called a timber tree.

It will then be eight inches in diameter and may be used. At an age of forty years a diameter of from fourteen to sixteen inches will be attained, and the tree may then be utilized for practically all purposes. In a hundred years a forest may be totally restored with timber that excels in every way the original product of the land.

New York has 60,000 acres of state land that has been totally denuded of its forest trees. The forestry commission of the state has already begun the work of restoring it. Within the last two years 500,000 trees have been transplanted on these waste lands at a cost of only \$2,500, less than half a cent a tree. The transplanted forest covers an area of over a thousand acres, and the commission is busily engaged in replenishing the other denuded forest tracts, nearly all of which are in the Adirondack and Catskill mountains. Two forest nurseries are maintained. One of these, at Saranac inn, in the Adirondacks, is for the production of evergreens or conifers, the timber trees. The other, the hardwood tree nursery, is at Brown's Station in the Catskills. The trees that are being raised are nearly all indigenous to the soil of New York, but several foreign varieties that have been found to flourish there are placed in the nurseries.

The forest nursery at the Forestry, Fish and Game building is under the direction and supervision of A. Knechtel, forester to the forest, fish and game commission of New York. A number of other eastern states, where the timber supply has been drawn upon for a century, are maintaining

forest nurseries, with the view of preventing a total spoliation of their once splendid forests, but New York is the pioneer in the work, and the only state which has an exhibit at the Fair showing the practical side of this important work.

The Philippines and Porto Rico showed a wide range of species corresponding with their variations in climate. The former islands catalogued more than 1600 kinds of trees out of the wealth of species which are known to exist in the archipelago.

A noteworthy feature of many of the state exhibits was that the scientific representation was subordinated to the commercial aspect, in order to show the products which are regularly in the world's market. The manufacture of paper from yellow pine shavings and from catalpa was illustrated in a number of state collections; also the methods of application and the effects of stains and varnishes were extensively illustrated. The variety of finished wood products shown was limited by the exhibit space available. This was also true in relation to the illustration of methods employed in the forests, also in the wood-working establishments. Interesting representations of these processes were made by photographs, paintings and other forms of illustration.

U.S. Bureau of Forestry:

Another notable illustration of forestry culture was the demonstration of tree planting presented in a special tract of land southwest of the palace of Forestry and Fish and Game by the United States bureau of forestry. One of the intentions of this practical exhibit was to illustrate the cultivation of trees in relation to the farm. The exhibits of the United States bureau of forestry included a remarkable series of transparencies showing typical single forest trees, groups of trees, forest scenes showing the different steps involved in the cutting, transportation and conversion of timber, and showing also how the forests have been affected by various causes. The whole story of forest life, deforestation and reforestation, was illustrated in the splendid series of pictures which were assembled in the arcade and the balustrade of this government exhibit. The large colored bromide photographs in the panels of the balustrade which surrounded the exhibit space furnished a very agreeable innovation upon the old methods of installation, and at the same time formed a suitable introduction to the scientific and popular lessons conveyed within the space. This comprehensive exhibit aimed to teach the timely lesson of the conservation of the forest for future use, and in co-operation with the states to teach how to protect forests necessary to conserve the water supply; how to restore the devastated land, and how to make the treeless lands produce useful woods. The floor exhibits of the United States bureau of forestry comprised collections of long leaf pine trunks which effectively illustrated the advantages in the preserving of trees and otherwise of the excellent system of turpentine approved by the bureau. Other cases contained forest insects and examples of their destructive work, instruments used by the forester, timbers treated by various preservative processes, maps illustrating the distribution and character of the forests together with the location and extent of national and state forest reserves. A very large lot of commercial timbers which had been subjected to various tests were exhibited and fully explained. The preparation of cheap timbers as substitutes for hardwoods which have become scarce is an economic problem which has been carefully studied by the bureau of forestry and was properly exhibited on outside space.

Practical demonstrations of lumber testing and wood preserving were also made by the United States bureau of forestry in connection with the elaborate installations of machinery for that purpose exhibited in operation in the Mining Gulch. Wood preservation by the creosoting process was effectively displayed by a Mississippi company whose exhibition of ties, plies and other construction timbers so treated was one of very great practical value to timber producers and transportation authorities. The wonderful usefulness of catalpa for ties, household and car furniture, paper manufacture and numerous other applications proved a surprise to all interested in forest utilization.

Yellow Pine Cottage:

There was not in the Forestry building a more pleasing and instructive exhibit than that of the manufacturers of yellow pine. Nothing else in the entire range of the Exposition taught the public a more valuable lesson concerning the capabilities of that cheap but beautiful wood. It is certain that no little cottage of three rooms ever before excited so much admiration or furnished so much valuable information as that installed as the feature of this display. This interesting and attractive exhibit was located in the southwest portion of the Forestry building; it was entered in the name of the Southern Lumber Manufacturers' Association, and of course was constructed entirely of yellow pine. Its novelty consisted in the unique treatment of the wood in both its exterior and its interior application. The wood used was not selected in any manner for the purpose, but was bought of a local yellow pine yard, and the result shown in this house may therefore be duplicated wherever yellow pine, rough and dressed lumber and interior finish are carried in stock. The weather boarding was stained brick red, the gable ends had a deep brown weathered color and the roof was stained a soft moss green. These colors beautifully harmonized and gave an extremely tasteful and artistic effect.

The entrance to the building was through the center room, which was about 10½ by 24 feet and wainscoted to a height of 7½ feet with paneling, its ceiling being entirely of wood with exposed cross beams. Between the wainscoting and the ceiling was a decorated frieze. The wood had been stained to a Flemish green color and rubbed to an egg shell gloss, the woodwork and the decorations all being in Flemish Renaissance style. On the right hand or northern side of the building was a room 12x14 feet, designed with a paneled wainscoting which was 7 feet deep, divided at intervals with pilasters. Above this was a decorated frieze about 2½ feet high, and the ceiling of wood paneling. The woodwork here was finished to a golden brown, the panels being somewhat darker than the balance of the woodwork. The room in the south wing of the building of the same size as that in the north wing was wainscoted entirely to the ceiling, which was divided by its wooden beams into three panels decorated with old gold. This room had woodwork stained a rich dark brown, carrying out the early English Renaissance style. In all three rooms the floors were edge grained yellow pine, stained and waxed. In each room was furniture consisting of chairs, settees, all of yellow pine finished to match the room itself. The electric light fixtures, the leaded glass and the mirror decorations in each room were in keeping with the character of the interior.

The House of Hoo-Hoo:

Undoubtedly the greatest illustration of the uses of woods in construction ever provided at an exposition was that represented by the club house erected by the lumbermen of St. Louis and Kansas City as headquarters for the lumber fraternity and a place of entertainment for their families and friends. This unique building which was situated in the Plateau of States was indeed a remarkable illustration of the possibilities of wood utilization and decoration and was designated the House of Hoo-Hoo. Its character and features are best described in the words of N. W. McLeod, then president of the Southern Lumber Manufacturers' Association. Mr. McLeod wrote of the building:

Believing that headquarters for the lumber fraternity was desirable, a number of the lumbermen in St. Louis and Kansas City conceived the idea of erecting on the grounds of the Louisiana Purchase Exposition a building which would combine within itself several important features. In the first place it was to be the headquarters and resting place for the lumber fraternity, their families and friends. It was further designed to illustrate the refinements of the forestry industry. It was determined to finish each one of the rooms on the first floor of the building in a representative finished wood of the United States: one room to be in redwood, one in cypress, one in gum, one in sugar pine, one in oak, one in veneers, and the main auditorium in yellow pine. This room which had a seating capacity of possibly 350 people was entirely of yellow pine. It was proposed to show in this room the possibilities of yellow pine as a finished wood. It was perfect in

every particular. At the particular request of Tarleton H. Bean, head of the Forestry department, this entire building and each separate room were entered subject to award as exhibits of the Forestry department and were opened for the inspection of the public.

The House of Hoo-Hoo was one of the attractive buildings on the Exposition grounds. Its construction, finish and furnishing represented an outlay of about \$30,000. The original building having burned during the Exposition, it was duplicated within thirty days – an example of extraordinary energy and enterprise.

Important outdoor exhibits such as described were features of the forestry display, occupying several times the space devoted to exhibits of the same character within the palace of Forestry and Fish and Game. Among other prominent outside exhibits were a number of large timbers and tree sections west of the Forestry building, parts of the exhibits of California, Kentucky, Mississippi, Missouri, Oregon and Washington. In the same vicinity were the portable house and the large wood specimens of the state of Washington.

Foreign Exhibits of Forestry:

The foreign countries contributing to the forestry display were: Argentine, Austria, Belgium, Brazil, Canada, Ceylon, China, Costa Rica, Cuba, Egypt, France, Germany (including German East Africa), Great Britain, Guatemala, Haiti, Honduras, Italy, Japan, Mexico, New South Wales, New Zealand, Nicaragua, Peru, Portugal, Spain, Slam, Spain and Venezuela. Many of the foreign exhibits were highly representative. Canada brought together a beautiful collection containing about 3000 varieties of wood, some of them of course grown only at experiment stations. Among the other foreign countries which installed very large series of wood exhibits were Argentine, Brazil, France, Japan, Mexico, Slam and Venezuela. Each of these collections contained a wealth of material for study.

Some of the exhibits from foreign countries included logs sawed in the shape and of the dimensions required by foreign buyers, and thus furnished a useful hint for the preparation of expert woods. This was particularly noticed in one of the wood exhibits from France. France also presented elaborate illustrations of the preparation and finish of woods for furniture and rich decorative purposes. Germany gave illustrations of its forestry methods and appliances, also showing specimens of forest products, including specimens of woods from German East Africa. Austria included an exhibit representative of its woods with its display in the palace of Agriculture. Great Britain installed photographs, maps, plans, publications, fully setting forth its forestry resources and administration. Ceylon was represented by an interesting exhibit which included examples of woods, lumbers, rubbers, resins, gums, oils, wax, senna leaves, tailpot leaves and other forest products. Egypt sent specimens of its gums, resins, rubber and gum arable. New South Wales installed examples of timbers and hardwoods. New Zealand presented a representative exhibit of forest products, including examples of timbers, hair tree, kauri and other woods and a notable exhibit of kauri gum.

Portugal contributed a superior exhibit the principal feature of which was an excellent collection of cork products. Turpentine, spirits of turpentine and a collection of examples of rubber were other items of the display. Spain offered examples of corkwood and corks and of licorice root and its extract.

Japan taught how great variety of products may be obtained from bamboo and rattan. That country also showed the utilization of wood chips in the manufacture of ladies' hats, braids and fancy ribbons. China was represented by an exhibit of woods for cabinet work and for building, rattan and bamboo ware, corks, camphor, oils, potash, resin and a collection of roots, barks, used in pharmacy and dyeing. All of these examples were installed in the general Chinese exhibit in the palace of Liberal Arts. Siam installed a notable collection of its forest products including a variety of woods-teakwood, agilla wood, resinous woods, and a collection of gums, resins and rubber.

The displays of forestry wealth of the Central and South American countries and of

the West Indies were somewhat in the nature of a revelation to the general public at least. Argentine presented a large collection of woods, also bark for tanning, railway timbers, paving blocks and cooperage. Brazil's exhibit was very comprehensive, including woods in extraordinary variety, wood fibres, rubber sap, rubber, gums, resins, medicinal roots, barks and extracts, finished forestry products. Costa Rica presented a collection of woods, embracing hard woods, dyeing woods, tannic woods, and an exhibit of rubber, showing many varieties. Cuba installed an impressive display of rich woods, including numerous examples of mahogany and Umbers of great tensile strength. Guatemala exhibited a large variety of woods, including mahogany, cedar and pine, and a series of samples of India rubber. Haiti made an excellent exhibit, a feature of which was a pavilion made of different kinds of Haitian construction and furniture woods-mahogany, pine, cedar, oak, *lignum vitae*. Honduras presented five hundred specimens of its woods. The exhibit of Mexico was extensive and representative - it embraced a very large collection of wood samples, including dye woods, also exhibits of cork, tanning bark. Nicaragua installed an important display of its forestry products in its national pavilion. Peru presented a superior exhibit of forestry; notably including rubber trunks, rubber leaves, woods, dye stuffs, resins, wild cotton, wild cane, oil nuts. Venezuela's exhibit was representative. It embraced logs, wood for cabinet work, for building, fuel, staves and construction, 303 varieties; also dye woods, barks, seeds, tanning woods and barks, and resinous and rubber wood.

Fish and Game:

The collection of displays of fish and game was extensive and representative and included both live and still exhibits. In each division and section of the display the installations were superior and in many cases striking. Numerous important exhibits were presented by individual exhibitors in every group, although, as in the department of Forestry, the greater number of displays were installed by participating states and nations. Twenty-one states and territories of the United States and twenty-three foreign nations contributed to the display of fish and game. The exhibit was characteristic of progress. The development of the modern breech-loading gun through all its various stages from the primitive bow gun of ancient times was clearly shown in a splendid collective exhibit which occupied a very large and prominent space in the palace of Forestry and Fish and Game. Foreign countries contributed very greatly to the value of the gun exhibits, the leading European nations presenting large collections of representative weapons manufactured by the most celebrated gun makers of the different countries, while others contributed collections of native weapons of warfare and the chase. Great advancement was shown in the accuracy and durability of guns and in the perfection of ammunition-also in the manufacture of fishing tackle and other equipment. Numerous exhibits of the latest devices of all kinds employed in hunting and fishing and for the capture of large and small game were presented by American and foreign exhibitors.

Among the more notable individual exhibits in the United States section was a very large display of skins, furs, mounted and unmounted, rugs of animal skins, game trophies, animal traps. This exhibit occupied 1,600 feet of floor space and was very effectively and attractively installed. It was presented by a St. Louis company. Other interesting individual displays in this section were a collection of flashlight pictures of wild deer by George Shiras, 3rd, an exhibit of animal paintings by Alexander Pope, taxidermy under convex glass by H. L. Rand, a collection of butterfly mounts by C. B. Riker, and a splendid collection of Indian relics presented by Chris. Miller.

Several interesting exhibits of hunting and fishing boats were made by leading companies, including examples of folding boats and canoes. A striking and refreshing adjunct to its exhibit was installed by an Alaska salmon packing company in the form of a rushing mountain stream, breaking over the rocks, representing the fresh water that make up the salmon breeding rivers of the west. Methods of preparing, canning and serving salmon

were illustrated. A number of exhibits of live fish in glass display tanks were made by fish culturists, notably an exhibition of fine gold fish of several varieties and displays of fish of waters in the vicinity of St. Louis-black bass, sunfish, catfish, crappie.

The state participation was notably distinguished in both the Fish and Game sections. The reproductions of the game animals and fowl, also of the fish of the various states and territories were remarkable for their elaborate character and for the extraordinary varieties and range of fish and game possessed by each and notably by the United States as a whole. The states and territories represented by exhibits were: Alaska, Arkansas, California, Colorado, Connecticut, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Puerto Rico, Rhode island, Virginia and Washington.

The live exhibits presented chiefly by the states were principal attractions of the fish and game display. The living Mongolian pheasants of Oregon, the marine pool of New Jersey, stocked with the large food and game fishes of the Atlantic coast of that state, the aquaria of Pennsylvania and Missouri were features of especial interest. A most important live exhibit was the Missouri live game display which occupied more than 2 acres of ground west of the Forestry and Fish and Game palace, including an artificial lake 200 feet long around which were displayed in proper enclosures the game fowl and animals of the state. Among the species exhibited were many varieties of water and land fowl and birds, deer, wolf, fox, skunk, raccoon, opossum, bear, wild cat, squirrel and other well-known animals. Conspicuous among the wild birds were the turkeys and pheasants which add so much to the interest of the hunter.

Fresh Water Aquaria:

The fresh water fishes were displayed by Pennsylvania and Missouri in tanks contained within enclosures somewhat resembling grottoes which were especially notable for their lighting effects. The enclosures were so arranged that the visitors saw the fish by means of light which passed through the water of the tanks. The aim of these two states was to show as far as possible their principal food and game fishes. Pennsylvania introduced a pleasing feature in the little waterfall and raceway leading to a large circular wooden tank which was set in the floor at the south end of its space. This waterfall and waterway as well as the big storage tank containing larger fishes added very greatly to the beauty of Pennsylvania's aquarium. Missouri was highly successful in showing brook trout and rainbow trout from the private establishment of August Lauth, whose work in the cause of fish culture in Missouri cannot be too highly commended. In addition to the interesting series of grotto tanks Missouri installed a pool for larger fish. The whole number of tanks used in the fresh water aquaria of the several states and by private fish culturists was 65. In addition to these were the pool for large fish installed by Missouri and the tank pool of Pennsylvania. The state of Washington installed an operating fish hatchery in which the spawning of salmon and its early evolution in fresh water were illustrated.

Marine Pool:

The salt water aquarium utilized by the State of New Jersey was located in the center of the palace of Forestry and Fish and Game. The pool was 40 feet in diameter and 5 feet deep and was protected by an iron railing. It was built of cement and broken stone, the bottom and sides reinforced by steel bands; an outlet from the bottom connected with the exposition drains. Another opening near the bottom communicated with a pump which constantly took out the water and forced it through a 6-foot pressure filter of the Jackson filter manufacturing company's type, and returned it through a pipe at the top, giving the filtered water a drop of about 3 feet through the air. The filtered water was delivered

through a reducer, and this was the only device found necessary for its proper aeration.

The salt water was brought from the Atlantic Ocean and from the Gulf of Mexico in cars which were obtained through the courtesy of the Union Tank Line Co., and was transported free of cost by the following railroads: Louisville & Nashville; Baltimore & Ohio; Southern Railway; The Pennsylvania; New York Central & Hudson; Mobile & Ohio. The success of the marine display was secured mainly through the kindness of these generously co-operating agencies.

The plan of the marine pool was the exhibition of live food fishes, many of large size, in a container of water which should be at the same time storage reservoir and a display tank. The method, which is a new one in aquarium maintenance, was entirely successful and it proved to have the additional advantage of great economy. The temperature of the salt water in mid-summer never exceeded 71 degrees, and the cooling off process towards the close of the Exposition was so gradual that only the most delicate of the migratory fishes succumbed to the cold. With the addition of a common gas heater through which to pass a coil for the water to traverse on its way from the filter to the pool, this system will be found practicable throughout the year. No cooling of the water in summer will be necessary, and the only aeration required can be accomplished by the simple device described above. As many as 21 species of fish were shown at one time by the State of New Jersey. The largest fish in the pool at any time were the sharks which did not live long, and the drum which proved quite hardy in captivity, although they did not obtain sufficient food for their continued growth. There would have been little difficulty in keeping the fish alive and in good condition if they could have been transported without the severe injuries which were almost inevitable during the long haul from the Atlantic coast.

State Exhibits of Fish and Game:

Among the still exhibits made by the states and territories, that of Alaska, containing samples of its rich furs, also of its numerous varieties of game and fish, was interesting. Arkansas also presented an attractively installed display, including specimens of its fish and game, and of fishing equipment and products. In California's exhibit were specimens of the famous game and food fish of the waters about Catalina Island. Handsome collections of mounted wild game and fowl and of numerous varieties of marine and fresh water fish of California were presented. An interesting feature was a collection of paintings at rare specimens of marine life by Lauderbeck. The Connecticut shell fish commission installed a representative display of shell fish in glass show cases, which was accompanied by photographs and maps bearing upon the state's fish culture and resources. One of the striking installations was that of Colorado. This exhibit was in the form of a hunters' lodge or cave, the exterior of which furnished a rugged and strikingly effective setting for remarkably handsome mounted specimens of game animals of the larger varieties. In this unique and important display were included whole mounts of elk, deer, antelope, mountain sheep, bear, wolf, lion and numerous other fur-bearing animals; mounted heads of elk, deer, sheep, buffalo, antelope, lion, wolf, lynx, fox, coyote; mounted rugs of bear, lion, wolf, lynx and wolverine; 50 cases of game birds in coveys, eagles and other bird specimens; mounted fish and mammals; and finished furs. Some of the mounted specimens, also of the rugs, were of rare quality and high value. The rich display of rugs on the floor of the interior or the lodge was particularly notable. This exhibit was one of the centers of attraction in the palace of Forestry and Fish and Game.

Louisiana was represented by specimens, mounted and otherwise, of fish, frogs, toads, reptiles, lizards, soft-shelled turtles, birds and mammals of the state. Maryland presented a collection of fish and game exhibits which were installed with its display in the palace of Agriculture; also raccoon and muskrat skins, crab nets, gill nets, oyster gathering equipment and game fowl decoys. Michigan's exhibit included, besides a general display of its resources of fish and game and wild fowl, a display of fishing equipments and products.

Minnesota installed an attractive exhibit, a feature of which was a realistic northern forest setting showing mounted specimens of birds and animals in natural pose. The display included examples of fish and of fishing equipment and products. Minnesota also installed a large aquarium for showing the best specimens of all of the fish of the state, but this was later abandoned on account of delay and difficulties of refrigeration of water. Mississippi presented a general fish and game display, including a collection of marine invertebrates and exhibits of fishing equipment and products.

An Adirondack Camp:

In addition to the important live exhibits already described Missouri installed mounted animals; heads; birds; skins and furs in the rough; original drawings and paintings of animals and birds; specimens of casts and stuffed fish; nets, tackle, boats, devices used in fresh water fishing; gear of every description; anglers' apparel, rods, reel, line; also an exhibit of sportsman's arms and accessories. A handsome exhibit was installed by Montana in which whole mounts of large game, including buffalo, elk and black wolf, were conspicuous. Specimens of fowl and fish were also presented in this display which was effectively installed. In addition to its live fish display already mentioned, New Jersey presented an exhibit of live oyster beds with equipment showing the oyster industry of the state; an aquarium of fresh water fish found in the state; mounted specimens of game animals and game fowl; mounted specimens of birds, nests, eggs and young; maps showing bird laws of the state; and photographs showing fishing grounds of the state. New York installed a strikingly attractive exhibit in the form of a typical Adirondack Mountain hunters' camp with furnishings and hunting and fishing equipment complete. Specimens of animals and birds of the State of New York; mounted specimens of wild ducks, geese, shore and water birds were shown. The display also included a collective exhibit of shell fish from the waters of the state, with specimens of marine life injurious to the same; and mounted specimens of New York food and game fishes. North Dakota presented an exhibit of game birds and animals.

North Carolina was represented by an extensive exhibit effectively presented in a series of handsome upright show cases arranged on either side of a log hunting lodge which formed the centerpiece of the display, the representation included mounted specimens of fish, birds and wild fowl found in the state; mounted specimens of game and fur-bearing animals; specimens of raw and dressed fur; collection of skins; original drawings of birds and animals; collection of raptorial birds and other fish destroyers; collection of marine invertebrates; collection of native reptiles and batrachians; preserved specimens of aquatic life, including shell fish and crustaceans; casts of fishes and cetaceans; collection of oysters; exhibits of wood and metal fishing tackle; models of boats and vessels; model of Hatteras dead rise skiff; model of kimekeet oyster schooner; model of sharpie; fishery literature.

Exhibits of fish resources and fishery products predominated in the display of Oregon, a variety of remarkable mounted and preserved fish specimens being shown, notably Columbia River "chinook" salmon, trout and razor clams. Fishing equipment also formed an important part of the exhibit, which included numerous mounted specimens and heads of animals and birds. The exhibit of living ring-necked pheasants of Oregon has already been mentioned.

The display of Pennsylvania was one of the most important and interesting in the palace of Forestry and Fish and Game. The aquariums of live fish, also the fish way and pool for larger fish have already been described. The Pennsylvania exhibit of fish also included mounted specimens of a large variety of game and food fishes, as follows: Brown trout, California trout, black bass, muscallonge, pickerel, eel, gar fish. A handsome series of water color drawings of fish was also shown. The special display of the state's department of Fisheries included mounted specimens of large fish of Pennsylvania, water colors of certain species, photographic transparencies of rivers and creeks in the state, an interesting collection of illegal and confiscated nets and a collection of mounted specimens of birds, mam-

imals and reptiles which prey upon fish. Pennsylvania's exhibit of game was very complete. A considerable portion of the exhibits of this character however was installed in the palace of Agriculture, in the form of a systematic collection of mounted Pennsylvania birds and animals prepared by the economic zoologist of the state. This collection was remarkable for its comprehensive character; also for the superior execution of its individual specimens as well as for its handsome and effective installation as a whole. A large collection of birds' eggs was also presented in the palace of Agriculture. In the palace of Forestry and Fish and Game was installed the Shiros collection of flashlight photographs of wild game already referred to.

Examples of tortoise shell were presented by Puerto Rico with its exhibit in the palace of Agriculture. Rhode Island installed a collection of mounted specimens of fish and game; models of fishing boats; seines and other fishing paraphernalia of sport and commerce; photographs, maps illustrative of the fishing resources and activities of the state. Virginia presented a display of the products of hunting, also of fishing equipment and products, of which oysters were a prominent feature. The fish hatchery of Washington has already been mentioned. Other exhibits presented by this state were illustrative of fish culture and aquatic life, seventy-four varieties of fish being represented. A rather impressive collection of mounted large and small game was also installed.

Foreign Exhibits of Fish and Game:

The foreign countries participating in the display of fish and game were: Argentina, Belgium, Brazil, Bulgaria, Canada, Ceylon, China, Costa Rica, Cuba, Egypt, France, Germany, Great Britain, Guatemala, Haiti, Japan, Mexico, New Zealand, Nicaragua, Peru, Portugal, Slam and Venezuela. Argentina installed exhibits of hunting weapons, in the palace of Manufactures: in the palace of Agriculture was shown a large variety of animal skins and of bird skins and feathers. An ostrich robe and a guanaco blanket were items of this display. The exhibit of Belgium was installed in the Belgian national pavilion and included a notable display of fire arms and examples of fishing equipment and products. A collection of skins of various wild animals and reptiles, and of feathers, nests and eggs of birds, also an exhibit of fishing equipment and products were presented by Brazil.

Bulgaria was represented by an exhibit of nets. The exhibit of Canada was interesting and representative and included specimens of mounted and live animals, photographs and enlargements depicting hunting and fishing scenes. Perhaps the most interesting feature of the exhibit was the family of live beavers shown in a pool, with beaver work dams. This pool was of cement, about 3 feet deep, 16 feet wide and 24 feet long. A central structure in the pool was divided into four compartments for the separation of the six animals which constituted the collection. These beavers were kept in excellent condition throughout the exposition period. They were fed upon pieces of poplar and other soft woods from which they removed the bark. They were fond also of bread, green clover and green corn: these articles were used to vary their diet. After the close of the Exposition, they were shipped to the Adirondacks in New York, having been purchased by the forest, fish and game commission of that state, for introduction in a suitable lake region.

An interesting exhibit was presented by Ceylon, of its products of hunting and fishing. Rich examples of native weapons were shown in the Ceylon pavilion. In connection with its general exhibit to the palace of Liberal Arts, China presented interesting examples of native hunting weapons, also of skins, furs and feathers, mounted birds and butterflies and of models of fishing boats and implements for fishing. An exhibit of tortoise, armadillo and pearl shells also of pearls was presented by Costa Rica in the palace of Agriculture. A handsome tiger skin was also shown. Sponges and sea shells were exhibited by Cuba.

A very interesting exhibit was installed by Egypt which was notable for its rich collections of ivory and native arms and trophies. Heads of hippopotamus and gazelle and specimens of leopard skins and ostrich feathers were other features of the display. The exhibit

of France included superior displays of fire arms and ammunition handsomely installed. A representative exhibit of fishing equipment and of sea products, together with publications on fish culture, was also presented. Somaliland sent ivory to represent the French Colonies.

An excellent exhibit of guns, carbines, pistols, ammunition, traps and other hunting equipment was presented by Germany. The German display also included specimens of antlers and wild boar heads, tortoise shell, mother of pearl, sponges and notably an important exhibit of elephant tusks and rhinoceros horn from German East Africa, which was installed in the palace of Agriculture.

Great Britain's Food Fishes:

The exhibit of guns and other hunting weapons and equipment made by Great Britain was of most superior character and was the principal feature of its display. A handsome collection of hunting trophies in the form of mounted heads of animals killed in various sections of Central Africa was presented. The Marine Biological Association of the United Kingdom installed an important exhibit illustrating different stages in the growth and development of principal food fishes in the British Isles, also a collection of marine animals, including creatures which constitute the chief food supply of the marketable fishes, with publications. Examples of fishing tackle, fish paste, and fish products were also presented in the British displays.

In its national pavilion, Guatemala installed specimens of quezabs and other native birds. An exhibit was presented by Haiti which contained examples of tortoise shell and products also of sponges.

An extensive and interesting exhibit was installed by Japan. The forestry bureau of that country included in connection with its forestry display a plan of the imperial wild duck preserve, Shinhama, a collection of skins of wild duck and hawk, sportsman's equipment, photographs. Other exhibits of furs and skins of wild animals finished and in the rough, also of downs of seabirds were shown. In the section of fisheries, the Imperial Fisheries Bureau installed a display of fish seines, nets, lines and boats; photographs of same in use; statistics and map showing location of important fish; specimens of sardines, anchovies, chub mackerel, corals, prawns, "tai," oysters, crabs and eels; and illustrations of corals and prawns. A variety of fish nets made of cotton, flax and silk and of other fishing equipments was shown by Japanese manufacturers. The local government of Hokkaido exhibited photographs of herring fisheries and specimens of herring, cod and "suketo data." The exhibits of fishery products were extensive, including preserved fish of numerous variety, pickled, canned, salted and preserved in oil, and many examples of shell, coral and pearl with an interesting variety of articles made of these materials. A number of exhibits of the latter class were of very superior character notably exquisite ornaments made of pearl, coral, etc, and black coral. The display of fish culture embraced model and photograph of Chitose hatchery, photographs of oyster and "haigai" culture, and model and photograph of fish ponds.

The exhibits of Mexico included collections of mounted animals and birds and fishes of that country. Examples of fishing nets were shown. A feature of the remarkably handsome display of New Zealand was a very interesting exhibit of Māori Indian weapons, also of Māori carvings and Māori robes-the latter being unique creations made of the rich plumage of birds. Mounted fish, birds, deer heads, paintings, views, were prominent in the exhibit which was installed with such taste and effect as to receive a special gold medal for its excellence from the international jury. The results of the acclimatization of valuable game animals in a new country were shown in this exhibit. It contained a splendid collection of the heads of the red deer taken over from Scotland, besides enormous skins of the brown trout of Europe and the rainbow trout of California, both of which were successfully introduced.

A collection of skins, furs, mounted animals and birds were installed by Nicaragua in its national pavilion. Peru was represented by an exhibit of alpaca hides. Portugal sent exhibits of cod liver oil and periodical publications. An interesting exhibit was presented by Siam which included a large variety of native hunting and fishing equipment, also of hunting products, notably a collection of tiger and leopard skins, rhinoceros skin and horns, buffalo horn, elephant tusks. The exhibit of Venezuela contained a notable collection of feathers, horns, shells, skins and furs, also of butterflies. Exhibits of bird skins, nests and eggs, natural history collections, also of fish scales and flowers made from the same were presented.

CHAPTER XIV

MINES AND METALLURGY

The Gulch—Fuel Testing Plant—The Cement Age—Thirty-two Acres of Exhibits—Artesian Well Drilling—A Placer Mine in Operation—The Pack Train of Burros—Model Coal Mine—Metal Pavilion—The Battleship Turret—A Foundry

THE extent to which the various races of the earth have availed themselves of its mineral resources has been a mark of their progress in civilization. The visitor to the Exposition of 1904 saw the phenomenal advancement made by the twentieth century in this direction. The "Mining Gulch" offered a practical, working object lesson of the methods and machinery now applied in the sinking and operation of mines. Naturally America led in this. Today American mining machinery may be found from the Klondike to Cape Horn, from Nova Scotia to Lower California, in Australia, South Africa, the mountains of Russia, in China, in Japan and throughout Europe. A material part of this conquest has been made in the last ten years. The improvement in devices was reflected in the palace of Mines and Metallurgy and in the "Mining Gulch."

The advancement made in metallurgical processes and appliances is suitably regarded as phenomenal. No single industry has been more immediately associated with the extraordinary progress of the last quarter of a century than that of metallurgy. This is particularly so of the last decade. Remove iron, steel and copper, lead and zinc, from the materials available by society and progress would abruptly stop. Coal is even a more primal agent than iron; it is behind the availability of almost the whole wealth of the earth and the enjoyment of it. The fuel energy problem is one of the most serious that faces the present and future generations. At the Exposition of 1904 was inaugurated by the United States government a scientific investigation into the possibilities of coal as an energy producer, both through steam and gas. This investigation emphasized the significant fact that we are beginning to proceed deliberately and scientifically to open the larger doors of progress in the laboratory and through the practical testing plant instead of depending upon the accident of discovery or the chance genius of the workshop. One of the results promised by this fuel investigation is the perfection of the briquette made of slack coal, also of lignite. Another result promised is the elimination of smoke and an even greater saving of coal, through the demonstration that it yields much more power energy per ton in form of gas than in steam.

The Cement Age:

We are passing into the cement age. The specimens of cement and concrete construction shown in the "Mining Gulch" and elsewhere were revolutionary in their suggestion and promise. The encouragement of their inspection is already apparent in the spread of cement and concrete building throughout the world. The practical introduction and confirmation of many innovations will date from the Universal Exposition of 1904. Expositions are truly epoch marks. Through the notable exhibits of its great Exposition the city of St. Louis has associated itself with the material progress of the world.

In general, the exhibit of Mines and Metallurgy at the Exposition of 1904 was an instructive representation of the mineral resources of the various countries of the world and of the uses made of them to improve the conditions of human life. The representation by the United States was on a large and immense scale including a great array of exhibits by private interests in addition to displays representing fifty-one states and territories. Twenty-nine foreign nations also participated in the exhibit as follows: Argentine, Austria, Belgium, Brazil, Bulgaria, Canada, Ceylon, China, Cuba, Egypt, France, Germany, Great Britain, Guatemala, Haiti, Honduras, Hungary, Italy, Japan, Mexico, New Zealand, Nicaragua, Peru, Portugal, Siam, Spain, Sweden, Switzerland, Venezuela.

in this department as in others the advantage of the extensive exhibit areas offered by the Exposition was effectively illustrated. The building assigned to the department of Mines and Metallurgy at Chicago in 1893 was 350 by 700 feet, having an area of about five and one-half acres. The building for Mines and Metallurgy at Buffalo covered about an acre and a half. The palace of Mines and Metallurgy at St. Louis provided more space for mining industries and exhibits than was offered by the three expositions at Chicago, Buffalo and Omaha. Large as the palace was, it by no means contained the mining exhibits. Adjacent to it was a wide ravine which was available for a most interesting outdoor display of mining machinery, mining processes and mining life.

Palace and Gulch:

The report of the chief of the department of Mines and Metallurgy, Joseph A. Holmes, contains the following:

The building prepared for exhibits of this character far surpassed anything of the kind ever before provided for a like purpose. It covered an area of nine acres (625x760 feet) and was one of the most beautiful buildings on the grounds, being of distinctive and impressive architecture. As in other buildings of this Exposition a fact which should be strongly emphasized - all of the space was ground floor space, no exhibit galleries being employed. Notwithstanding this fact the exhibit space available was greatly in excess of the space, both gallery and floor, heretofore provided for a similar purpose at any exposition. The palace of Mines and Metallurgy was prominently located in the main group of exposition palaces, was rectangular in shape and notably well adapted for exhibition purposes.

in addition to the areas provided within the palace of Mines and Metallurgy was the outside reservation of space adjoining the building and embracing about 13 acres of ground which was assigned to the use of the department for special operative exhibits. This section was in the form of a shallow ravine about 400 feet in width which extended for a distance of something like 1200 feet southeast from the building. It was designated "The Mining Gulch." The open area added to that of the palace of Mines and Metallurgy gave to the

department the unprecedented amount of practically 22 acres of exhibit space.

The aim of the exposition authorities was to show in the great palaces for exhibits at St. Louis not alone products and results but the processes and stages through which the raw materials passed in order that they might become available by and a benefit to mankind. The exhibits in the palace of Mines and Metallurgy were in accordance with this plan divided into five great groups, and these in turn into fifty-three classes which covered all the stages of mining from the preliminary prospecting and surveys down to the manufacture of mine products, into the articles of public and general utility. Whenever it might be possible so to do these processes were shown in actual operation.

The groups under which the exhibits of Mines and Metallurgy were presented, as indicated in the official classification of the Exposition, were as follows: working of mines; ore beds and stone quarries (equipment and processes); minerals and stones and their utilization; mine models, maps, photographs, metallurgy; literature of mining and metallurgy. The exhibits representing the mineral resources of the United States were made chiefly by the various commissions appointed by the different states, in which work these representatives received the active co-operation of the department of Mines and Metallurgy. Important individual exhibits of minerals supplemented these state displays, although the individual displays were generally devoted to illustrations of mining and metallurgical equipment industries and products.

Collective Exhibits:

Like the state exhibits, the displays thus made by private interests were in a high degree representative. In some cases, it was only possible to secure a representative exhibit of an industry by making this exhibit a collective one and having a uniform method of installation which showed the industry in a manner more complete than could be possible if these exhibits had been made by the individual concerns operating independently one from another. In this manner collective exhibits were prepared to show in the most attractive and comprehensive manner possible our mineral water resources, our wealth in coal, our iron and steel products and our brick and clay industry. These exhibits illustrated the resources of the entire country and proved of great interest to the general public and a source of information and study to those who were particularly interested in these industries. The identity of each concern contributing to these collective exhibits was, however, preserved.

Carrying out the purpose of an international exposition, the spaces granted to foreign countries were most liberal and the exhibits exceeded any previously made by these countries in the mining department. Emphasis may be given to the exhibits of France, Germany, Great Britain, Mexico, Brazil, Italy, Canada, and Japan. Each of these nations spared neither time nor effort in their endeavors to present the mineral resources and metallurgical product of their countries to the best advantage. Other countries, such as Sweden, Belgium, Argentine, Peru, installed exhibits illustrating the mining and quarrying industries.

The outside area assigned to the department in the "Mining Gulch" afforded opportunity for especially effective installations of important working exhibits, particularly including exhibits of actual mining operations. This out-of-door mining display was extensive and constituted one of the features of the exhibit of Mines and Metallurgy and of the Exposition.

Equipment and Processes:

In the group of exhibits illustrating the equipment and methods for the working of mines, ore beds and quarries, one of the most interesting displays presented was that installed by a well-known machinery building company. Many of the more important and recently produced forms of mining machinery and appliances were shown, including rock crushers, stamps, rock grinding mills, roasting and converting machinery, plants for the recovery of gold by the cyanide and chlorination processes, ore separators, amalgamators,

leaching plants. A stamp mortar weighing many hundred pounds built so that it might be readily separated into parts of a size small enough to be packed on a single mule was an interesting item of this exhibit. Perforated metal for use as screens in connection with mining work was shown, as were also a number of the famous Gates rock and ore breakers made by this company. These breakers besides being used in mining operations are very extensively employed in crushing rock for concrete work, for railroad beds, and for public highways. In addition to and in connection with its exhibit of mine working and milling machinery this company also presented an exhibit of Portland cement making machinery, and an important display of metallurgical equipment. Another interesting exhibit in this class, made by a Chicago company, included a full range of rock and ore crushers, conveyors, screens, cars, dump wagons, and all paraphernalia employed in the handling, crushing and conveying of rock in connection with mines and mills and in the general needs of road making. An exhibit of crushers in this display was especially important and interesting. This company also installed in the "Mining Gulch" two sets of oil well drilling appliances of full size.

Mine Working Illustrated:

An exhibit illustrating the different appliances for concentrating and Jigging ore was made by a Missouri company in the palace of Mines and Metallurgy. Another equally interesting display of appliances made by this company was presented in the miniature operating concentrating plant installed on the space occupied by the State of Missouri, also in the Mines Building. A third full size illustration of such apparatus was presented in the outside Missouri exhibit in the "Mining Gulch."

An important exhibit in the mining equipment group in the palace of Mines and Metallurgy consisted of a collection of modern and powerful air compressors, hoisting engines and a number of Leyner compressed air rock drills. One of these drills was operated at stated intervals during the day and upon request of interested visitors showing its capacity to bore holes in solid granite at the rate of from $3\frac{1}{2}$ to $6\frac{1}{2}$ inches a minute. The power for this drill was supplied by a 10x12 inch Leyner standard straight-line belt driven compressor, driven by a 2 horse power electric motor, which furnished air to the drill at 100 pounds pressure to the square inch. A large exhibit of drilling devices of the diamond and core drilling patterns was made in the palace of Mines and Metallurgy and in the "Mining Gulch." The collection included drills on tripods, in frames; and also a completely equipped mounted steam drill with boiler attachment, windlass, and all needed accessories; specimens of drilled cores.

Oil Wells in the Gulch:

The display of oil well machinery and appliances in actual operation in the "Mining Gulch" was extensive. An important exhibit of this character embraced both portable and stationary drilling rigs with their necessary equipment and tools. Six outfits were shown in operation, comprising a 3000-foot standard oil well drilling rig, an 1800-foot portable oil well drilling rig, a 1200-foot artesian well drilling machine, a 700-foot mineral prospecting machine, a 600-foot water well machine and a 100-foot earth boring outfit. Each of these machines was on an entirely different type as well as capacity, making a varied and interesting display. The motive power which operated these outfits included steam engines, gasoline engines, horse power and hand power outfits. Most of the machinery presented was made for drilling in hard rock and generally indicated sound construction to suit it for hard work.

A combination exhibit of drills and pumps was made by two companies in the "Mining Gulch" in a special building of suitable dimensions. A number of different sizes and styles of machines and a number of different drilling and fishing tools which are used in drilling for water, oil and gas, testing placer grounds and prospecting for other minerals and ores, also

assaying equipment, were shown. An artesian well was drilled to a depth approximating 300 feet on this exhibit space, to illustrate the methods employed and capacity of drilling apparatus. A 2500-foot oil and gas rig was shown in operation, illustrating the methods of putting down oil and gas wells in different localities. A 100-foot traction drilling machine on a roadway, indicating the method of transporting these machines, was shown. The installation of pumps in connection with this operating drill exhibit in the "Gulch" included a number of large deep well double acting direct steam and geared pumps which were presented in operation, showing the method of raising large quantities of water from deep drilled wells.

An important exhibit of steam and hydraulic turbine, mine and drainage pumps, was shown by a well-known company in the palace of Mines and Metallurgy. This company also installed and conducted an interesting operating exhibit in the "Mining Gulch." The purpose of this exhibit, which was located on the eastern border of the "Gulch" near the quaint adobe building of the State of New Mexico, was to practically demonstrate what is being accomplished with the latest improved forms of centrifugal pumps in both low and high horse power work for mining as well as other industrial purposes. A steam turbine was used to drive two of the pumps on exhibition and the power for a third centrifugal of the low-pressure type was supplied by a direct current motor. The remarkable efficiency of these pumping plants, in consideration of the small space which they occupy, constitutes one of their extraordinary features. The exhibit was of great interest to many investigators. Near this installation in the "Gulch" and between the state building of New Mexico and the quaint log lodge built by the State of Maine as its official headquarters a placer mine was in operation. The working of this mine was effected by a stream of water projected up the "Gulch" from one of the high pressure pumps and furnished a very interesting practical object lesson to the public of this method of mining.

A Tramway in Operation:

A working exhibit of wire tramway was installed in the "Mining Gulch." The length of this line was 1250 feet, extending from an upper or loading terminal near the Iowa state building and between the Pennsylvania and New York state buildings to an unloading terminal in the "Mining Gulch" close to the Park Commissary and the power plant. The tramway was supported between terminals by four immediate towers, two of timber and two of steel construction, illustrating the types of towers usually employed on tramways in exact detail as they are installed in mining camps for the transportation of ores and other metals. The buckets used on the tramway were $6\frac{1}{2}$ cubic feet capacity and each was fitted with special cast steel trolley sheaves, having malleable oil cups with brass bushings and malleable iron locking devices and clips. The motive power of the tramway was supplied by a 6 horse power motor through a line shaft and bevel gearing attached to the main terminal shaft. A metal ore bin with improved gate was shown at this terminal in connection with the tramway and loading of the buckets. A lever controlling the brake on the tramway and the starting box for the motor was located immediately in front of the ore bin and in limited space so that a single attendant could look after the tramway terminal and oversee the loading of the ore as it fell into the bucket. The operation of the tramway was automatic. When a bucket arrived at the loading point it was automatically detached from the running roller, and by means of a new system of levers its speed gradually retarded until it was placed at rest at the loading point. When loaded the bucket was started gradually by means of an accelerator until it reached the speed of the traction rope, to which it became automatically locked. The track ropes used on this tramway were of the patent flattened strand triangular construction, $1\frac{3}{4}$ inches and 1 inch in diameter respectively. The traction rope was of the same construction and $\frac{3}{4}$ inch diameter.

A comprehensive exhibit of wire rope, ore tramway cables, and underground mine

haulage was shown in the palace of Mines and Metallurgy. This exhibit was no less extraordinary for its excellence of installation than for the character of the product presented. It signally exemplified the possibilities of ornamentation in heavy and apparently unattractive materials.

An electric mine locomotive and third rail haulage system applied to mining was exhibited in operation on a railway in the "Mining Gulch." Exhibits of mining cars and their detached portions, wheels, and axles, were made by several companies. Various makes of cars were shown in use in connection with the ore train operated on the mining railway.

Exhibits of latest types of electric mine locomotives were installed in the palace of Electricity, and in the palace of Transportation.

A unique exhibit in the "Mining Gulch" was a burro pack train illustrating transportation of ores over mountain trails.

An operating exhibit was made in the Metal pavilion located in the "Mining Gulch" consisting of labor-saving appliances for chemists and assayers. Forty different styles of furnaces operated by either gas, gasoline or crude oil were shown; also cupel machines which produced perfect cupels. Six different styles of ore crushers were presented, one in operation capable of reducing 300 pounds of ore an hour to one-quarter mesh. A disc pulverizer took the product of this crusher and reduced it to 100 mesh and finer at the rate of 60 pounds an hour. A laboratory cyanide plant capable of making a practical test of from 100 to 200 pounds of ore by the cyanide process was installed, as also equipment for preparation and testing of coal samples. This exhibit attracted considerable attention from assayers and chemists.

The most advanced and improved methods of assaying and analyzing were shown in a thoroughly equipped assay office installed in the Metal pavilion by the Colorado School of Mines conducted by mining students. Here visitors could have assayed, without charge and within reasonable limits, such specimens as they might desire to test.

Minerals and Stones:

Naturally the large displays of raw materials were made by the participating states and nations. A number of excellent individual displays were made, however, many combining process and product. Important exhibits of mining apparatus, including models of mines, mining equipment and operations were installed in connection with these exhibits of natural mineral resources. This was particularly true of the extraordinary series of coal exhibits presented, the principal of which included elaborate working models of mines in full operation. Among the most instructive and attractive exhibits of coal and coal mining was one which included models clearly illustrating the operation of coal mining as pursued by modern methods, employing compressed air and electricity. A complete model of a modern coal mine above and below ground with typical mining village, railroad yard, train, station, cars, was presented. In addition to the illustration of mining, screening and loading coal into cars, a working model of the great coal handling machines or coal dumps now in use at lake ports was shown. The exhibit was made attractive by large columns of coal carefully constructed, also by photographs of the exhibiting company's docks in various important harbors of the United States.

Models of Coal Mines:

An elaborate collective and working exhibit of bituminous coal mining operations was made by three important companies operating in the east. A reproduction of three mines, one owned by each company, was presented. The model of one of the mines, which was 30 by 40 feet in size, showed power house, boiler house, offices, superintendent's house, some of the miners' homes, roads, plank walks, terraces, embankments, rocks, earth, trees, grass, flowers, railroad yard with numerous cars on the tracks, coke ovens in complete running

order. The operation of the entire plant, including tippie, chutes with screens, conveyors, slack washers, elevators, revolving screens and box car loader, was automatic and gave an extraordinary opportunity for the observation of the workings of a modern coal mine. Sections of the interior of the mine were shown with miners at work and numerous mine cars drawn by electric motors making trips at regular intervals. The other two mines were shown in a composite model occupying a floor space of 28 by 40 feet. One section of the model represented one of the mines, showing the incline mine car tracks and rope haulage, the boiler house, electric power plant, tippie, railroad tracks and other objects, reproducing the local conditions accurately. The other section of the model presented the interior workings of the other mine, illustrating the beatings, air courses, rooms, and a mine shaft at the bottom of which there was a large chamber containing the pumping machinery of the mine. Working models indicated the system of haulage. A pavilion built almost entirely of coal and coke with a floor space of 32x12 feet and about 16 feet high served as the office of this exhibit. This structure was of attractive design, with columns, pedestals, and arches, and with cornice and balustrade. It effectively illustrated how coal and coke may be applied to construction along lines approaching grace, symmetry and beauty. This collective operating exhibit was one of the most complete and interesting in the building and attracted much attention.

A large and elaborate working model of an anthracite coal mine was installed in the "Mining Gulch" and operated as a concession. This plant was a prominent feature of the "Gulch."

An interesting exhibit of coal products was made, a feature of which was a collection of by-products obtained from one ton of coal, including gas, coke, coal tar, sulphate of ammonia. Growing plants at the base of the platform supporting this exhibit indicated the fertilizing value of sulphate of ammonia. The products of coal tar were shown in cases, also samples of wood creosote produced by the Reuping process, and a model showing the method of laying slag and gravel roofing.

The exhibits of metallic and precious ores were numerous and made principally by the states. Important examples of iron, nickel, tin, radium and other ores were presented by individual exhibitors. A Missouri company installed an underground mine in the "Gulch" to illustrate methods and equipment employed in lead and zinc mining. The plant was operated as a concession, an admission fee being charged for inspection. The same was true of the Crystal Cave, a reproduction of a portion of the cave near Hot Springs, S. D., the property of the United States government.

Representative exhibits of building and ornamental stones were installed, in many cases very handsomely, both by the states and by private companies. In the latter class were included a handsome display of American marbles, an attractive display of onyx and marble, an exhibit of granite, and a display of building stone and dolomite.

Exhibits of slate were also numerous, though separate individual exhibits of this nature were limited. Many handsome installations were included in the extensive representations of this material made in the collective state exhibits.

Numerous displays of artificial stone, also of machinery and materials for making same were made by manufacturers in the palace of Mines and Metallurgy and in and adjacent to the Cement pavilion in the "Mining Gulch."

Exhibits of concrete construction materials and machinery were also numerous and were installed chiefly in or near the Cement pavilion in the "Mining Gulch." The examples presented included concrete railway ties, granitoid pavements, armored concrete construction, concrete beams, reinforced concrete beams and posts, reinforced concrete construction, concrete chimney construction, eccentric cement concrete press, and other concrete machinery.

The Cement Pavilion:

With few exceptions the exhibits of artificial stone and concrete and producing ma-

chinery above described as installed in and adjoining the Cement pavilion were items of a collective exhibit made by the Association of American Portland Cement Manufacturers illustrating the most modern methods of cement utilization. The principal item of this exhibit was the Cement pavilion itself, a structure of graceful design made entirely out of cement, sand and concrete. Other displays of cement products and appliances installed in this collective exhibit were: cement roofing tile, cement roofing, cement filled window and door frames, cement mosaic work, cement burial vaults, cement block machine, cement mixers and engines, and an exhibit of Portland cement. Another exhibit of Portland cement was presented in the Metal pavilion, in the "Mining Gulch." An important exhibit of giant Portland cement in the palace of Mines and Metallurgy included examples of cement rock, ground rock, clinker and cement. Other exhibits of cement were prominent in the collective exhibits of a number of the states.

Like the exhibits of artificial stone and concrete, the displays of clays and clay products were the most representative and varied that have been presented at an exposition. Accompanying the exhibits of raw and finished materials were also exhibits of clay working machinery and of processes of manufacture. The important clay working interests of St. Louis were represented in this great display. A feature of the clay and products exhibits was the effective grouping of a large number of the displays in systematic order within one general and handsome installation facade of finished clay materials, the whole, forming an instructive and attractive clay workers' section.

Another important and interesting feature was a working pottery installed in the "Mining Gulch." In this most interesting exhibit all of the processes employed in the preparation of clay, as well as the methods used in molding and turning it into final and graceful forms were shown. The potter's wheel and the decorator's brush were in constant service, as were all of the other devices and methods required in the manufacture of clay and other special features of the potter's art. A comprehensive exhibit of manufactured and decorated ware, unique and most attractive in variety of form, design and execution, was also presented in this exhibit.

The number of exhibitors represented in the clay workers' section collectively installed in the palace of Mines and Metallurgy was extensive and the displays included examples of every variety of products from coarse tile to decorative faience and pottery, Processes and products were illustrated by leading clay manufacturing concerns of the country including many of St. Louis.

Clay Products and Gems:

The extension of clay products into new and important channels of demand together with the great improvements in manufacture effected were fully set forth as were the increasing refinements of the art clay industry. The variety of useful and ornamental articles now made of clay rivals that of all other principal raw materials of the earth and the number is steadily and rapidly increasing. The wealth and variety of clay deposits in the United States was fully reflected in the numerous displays of clays and products presented in connection with the state exhibits. In the palace of Manufactures and elsewhere examples of the important achievements of the clay industry, in the lines of the world's finer and coarser needs, were presented in impressive succession. Altogether the exhibits made by the clay workers at the Exposition constituted one of its distinctive features.

An interesting collective exhibit of gems and precious stones was presented in the palace of Mines and Metallurgy. This exhibit, which was installed in handsome upright glass cases, was accurate and comprehensive in its illustration of American gem minerals and stones, their occurrence and finished state, and it attracted much attention. The display included the finest obtainable examples in the form of natural crystals, cleavages, rolled pebbles, and a full series of cut stones, illustrating all known forms of cutting European, Oriental, American and aboriginal. Among these were diamonds from Alabama, kunzite

from California, beryls from Brazil, sapphires from Montana. Another very attractive and interesting exhibit was made of American gems and precious stones, finished and in the rough, and handsomely mounted in glass cases. An operating lapidary was a special feature of this display, an adjunct which proved of great popular attraction.

A handsomely installed display of natural sharpening stones was presented including a great pyramid or cone of grindstones. The display of abrasives was elaborate and was participated in by leading manufacturing companies. Every kind of abrasive was shown in crude and finished state. A feature of one exhibit was two pieces of alundum, each weighing over one ton, shown just as delivered from the electric furnace only partly broken to reveal the interior. In another exhibit a pyramid of crystals of carborundum was displayed in an upright case, surrounded by finished products. A distinguished display was made of artificial graphite, carborundum and siloxicon. Neatly installed and its parts arranged with scientific precision this exhibit was important and interesting.

An exhibit of radium and radium minerals, radium apparatus, and ultra violet minerals was presented; also an important exhibit of the monazite industry, rare earths, chemicals and radio-active minerals; and a collection of monazite and radiographs made with monazite.

An elaborate exhibit was made of borax and the borax industry in the palace of Mines and Metallurgy; a unique feature in connection with which was a team of forty mules and drawing truck loaded with borax, illustrating the method of transportation employed in procuring the raw material from the borax deposits remote from railway lines.

The Plaster Works:

An important exhibit of gypsum was also presented in which no pains were spared to present all of the interesting facts relating to the procuring and manufacturing of this product. A collective exhibit was made consisting of gypsum rock, which is mined in seven states: New York, Ohio, Michigan, Iowa, Kansas, Oklahoma and Texas; photographs of thirty-eight plaster works owned and operated by the exhibiting company at the gypsum deposits; samples of the products manufactured, together with an exhibition of the uses to which manufactured plaster is put. The massive facade which enclosed this exhibit with its striking Egyptian design, handsome columns, long pediments and ornamental entrance, was one of the unique features of the palace of Mines and Metallurgy.

An elaborately installed display was made of asphalt in which crude and final forms of asphalt were shown, the latter samples illustrating the varied uses to which this material is successfully put. Rolls of roofing, flooring and insulating asphalt, and a long rectangular case bearing a small model of a house covered with this material, together with an upright case containing samples of mineral asphalt, asphalt oils in glass and asphalt in various stages of refinement were principal items of the exhibit.

A comprehensive exhibit of petroleum and its products was made, which was handsomely installed. The extraordinary scale upon which the great company presenting this exhibit operates and the perfection of its methods in procuring, refining and distributing oil, as well as the almost infinite variety of by-products which it manufactures were fully presented. The exhibit was scientifically as well as attractively arranged, setting forth by interesting example and detail the complete transfer of the petroleum from the crude well to the market in its various forms, of illuminating and lubricating oils, paraffine and the hundreds of other useful-many of them very beautiful-articles so familiar and so necessary in daily life.

Numerous exhibits of mineral waters of the United States were made. Of domestic mineral waters the United States geological survey installed an extensive collective and systematic exhibit containing samples from over a hundred different springs. A number of handsome individual exhibits of mineral water were presented in separate installations. Important exhibits of mineral waters were also included in the majority of state exhibits.

The great advantage of the use of models and maps in connection with mining oper-

ations has become fully recognized with the result that more of such material is available for exhibition today than at any previous time. In addition to maps of great size there were shown in reduced scale, coal mines, tipples, washers, coking ovens and practically every feature that goes to make up mining and especially coal mining plants. The states notable for coal products presented their most improved methods of mining and manipulating coal by means of such models and maps. A number of important exhibits of this character were installed in connection with exhibits of coal and have already been referred to. In such displays the genius of the mechanic was a striking feature and an aid to the engineer and student, each model representing the evolution of a series of operating mechanical appliances, in themselves a liberal education.

Under this group the United States geological survey made a very instructive exhibit of ore development charts, maps and publications, which was possibly one of the most complete and important installations of the kind ever presented for universal inspection. This important display attracted much attention and comment from experts.

Exhibits of geological, topographical and mineralogical maps, charts, relief maps and models were made by practically all of the states of the Union and the principal foreign countries in connection with their collective exhibits of minerals in the palace of Mines and Metallurgy.

An important collective exhibit of topographical models and relief maps, also a superior exhibit of geologic and topographic transparencies, were made by specialists in these lines.

An instructive collection of photographs of metallurgical and mineralogical laboratories and equipment was presented by Harvard University.

Processes for Ores:

The metallurgical exhibits were varied and interesting. Among the leading displays of this character in the palace of Mines and Metallurgy was one covering the general manufacture of heavy steel castings and forgings and showing also various guns, mounts, ammunition and ordnance material. The installation of this exhibit, which covered three blocks, was strikingly effective; being set on special foundations in a deep depression in the floor of the palace of Mines and Metallurgy. A full-size working model of a 12-inch battleship turret in which were shown improved methods for handling the ammunition supply and the machinery for the loading and handling of guns was a prominent feature. Displayed around this turret were other products of the exhibiting company. Notable items were a 3-inch mountain gun with its pack horse, a 6-pounder semi-automatic gun and mount, a 3-inch 16-pounder gun on pedestal, a 3-inch 12-pounder horse artillery gun, carriage and limber, armor plate subjected to test, various projectiles, some of which had been fired through steel plate, others burst by the action of a percussion fuse, giving an idea of possible damage resulting from their effectively directed explosion.

Various steel castings, heavy and light steel forgings for general commercial work, and three rings forming a portion of the lining for street car tunnels between Jersey City and New York under the Hudson River, were presented, along with additional displays of products including nickel steel forgings for locomotive purposes.

A principal feature of another important metallurgical exhibit was a large steel plate 72-100 of an inch in thickness, 142 inches in width and 558 inches in length. It was a remarkable product of the rolling mill, indicating the great advancement made in this practice within the last three years. A steel ingot weighing 20,000 pounds, a duplicate of that required to make the large plate mentioned, was shown in juxtaposition. The other rolling mill products in this and similar exhibits were indicative of high skill and efficiency of process and practice. An exhibit was made of steel rails in service on the electric mine railway in the "Mining Gulch."

Manganese Steel:

Elaborate exhibits of manganese steel castings and products were made and proved especially interesting to mineralogists and manufacturers. The use of manganese steel in machinery employed for crushing and handling ores, rock, coal, coke, matte, slag, cement, was shown. Steel tired and cast steel wheels for steam and electric railway service, with a variety of carbon steel castings, were also presented. The wide range of application of nickel steel castings was illustrated in the form of projectiles, gearings, stamp shoes and dies, tires and die rings for ore mills, pan bottoms, roll shells, plates for cement mills, trolley car wheels, bushings, lips and bucket bottoms for gold dredges. The manganese steel products exhibits included a number of sizes and styles of bank and office safes made of manganese steel by a well-known company; also a large bank safe deposit vault covering 100 square feet of space and weighing about 60 tons. This vault was lined with safe deposit boxes and drawers which were used by exhibitors of the department of Mines and Metallurgy for safe keeping of precious stones and metals. The mechanism of this mob and burglar proof safe deposit and security vault with its massive door and effective locking equipment was an interesting exhibit in itself, and together with the detail finish of the vault within and without formed one of the most attractive exhibits in the palace of Mines and Metallurgy. A number of safes furnished by the exhibiting company were used by various exhibitors and officials of the Exposition for the safe storing of valuable articles.

The use of nickel in connection with steel and the surfacing of metals was illustrated in an important exhibit. Nickel and its alloys were shown in all stages and conditions, including ore from various mines, together with the roasted ore matte. The central position in the display was occupied by a pile of nickel which represented the amount of that material used in a nickel steel turret such as that on the battleship Iowa. Nickel products of every variety were presented. Very interesting and instructive exhibits of malleable iron products were made; also of the appliances by which these products are obtained, including models of milling and annealing furnaces and molding machine.

Representative displays of materials and appliances of iron and steel in architecture and general constructive work in various forms, structural iron, and ornamental iron, were presented.

Important exhibits of rolling mill equipment were installed including rod rolling and wire drawing machinery, flying shears, gas producers, furnaces, and mills for rods, billets, hoops, merchant bar, cotton ties. A slag car adapted to the handling of great masses of molten metal safely and rapidly was exhibited. This car has two 4-wheel trucks of steel with slag pot mounted on trunnions, the later supported by a steel frame. Dumping of the car is effected by a cylinder in which either steam or compressed air may be used. On one end of the car is a retarding cylinder filled with oil which prevents too rapid motion of the slag pot, eliminating risk of accidents from premature dumping.

The Foundry:

Many interesting exhibits of metallurgical equipment were made in the Foundry building in the "Mining Gulch," the chief items being installed for service and constituting a complete working foundry. Cupolas, cranes, air compressors, cupola elevators, pneumatic elevator hoist, core ovens, moulders tools, moulding and tumbling machines and other foundry equipment and foundry facing, and supplies were furnished by various exhibitors. In this practical and operating foundry exhibit workmen were constantly employed during the exposition period making castings, moulds and patterns by improved methods, popularly illustrating a department of industry with which a great portion of the public is unfamiliar.

An exhibit of first importance as illustrative of metallurgical and mechanical advancement was installed in the Metal pavilion adjacent to the foundry. The uses and possibilities

of aluminum were here extensively shown. Sheets, tubes, rods, cooking utensils, automobile bodies, phonograph trumpets and an infinite variety of appliances covering the whole range formerly monopolized by iron, copper and tin were represented. A most interesting feature of this exhibit was a wire drawing and braiding machine. All of the machinery installed in this display was in regular operation so that the visitor could inspect fully all of the methods employed in the manipulation of this extraordinary metal. A metallurgical laboratory with full equipment and in operation was installed and conducted in the Metal pavilion by the Colorado school of mines in addition to its modern assay office previously mentioned. Other exhibits in the Metal pavilion were welding process operations, smelting and refining copper, electro plating and zinc metallurgy processes and products.

The most unique exhibit of zinc and zinc products ever installed at an exposition was made in the palace of Mines and Metallurgy. This remarkable display which was most effectively installed included many examples of zinc articles whose use is more or less familiar to the general public. Other articles heretofore made of different materials such as brass, iron and copper were shown made of zinc. The use of zinc for shoe eyelets for example, was illustrated. Church organ pipes of zinc, a large washboard showing the various styles of ribbing used, a section of a flight of stairs showing the use of zinc stair treads, nosings and stair corners, white bronze medallions and other ornamented pieces were more prominent specimens. The more direct products of the exhibiting company were displayed in the form of piles of spelter, casks of sheet zinc, boxes of flat sheets, a table of corrugated zinc, and a large display of wire rods, tubes and bands arranged in show cases. An elaborate and handsomely installed exhibit of lead products was made by a prominent lead manufacturing company. The display included examples of lead ore, lead pipe, bars, white lead, babbitt metal and solders. Representative exhibits of brass, copper and bronze castings were made by several companies.

In the "Mining Gulch" was a succession of varied and interesting exhibits in addition to those already mentioned. One of the principal features of this out-door division of the main section was a Black Hills gold reduction plant of full standard size which was operated throughout the day during the period of the Exposition. This plant was installed and conducted under the auspices of the South Dakota state commission, being the exhibit of the Black Hills mining men's association. The machinery included a 6-stamp gold mill, and the plant was constructed with the design of continuing its employment in practical service after the Exposition. The purpose of the exhibit was to show how the vast bodies of low-grade ore in Black Hills are made profitable.

California exhibited in the "Mining Gulch" in operation a complete 3-stamp mill with improved form of all-round discharge screens. The mill was connected with three concentrating tables to illustrate improved methods of handling ore after it leaves the plate. An old '49 steam mill was an interesting historical feature of this exhibit and graphically illustrated the marvelous improvement that has been made in this important line of industry.

An exhibit of peculiar interest in the "Mining Gulch" was the "Arizona Mining Camp" in which was set forth primitive methods of metallurgy as practiced by the Aztecs and their Mexican successors in regions remote from the centers of civilization. Method and device were as the originals and the operators were native Mexicans or of Mexican strain. The product of these primitive metallurgists and their furnaces was limited to copper; but this was of excellent quality and so malleable as to permit of being beaten out into vessels and trays of various shapes.

Fuel Testing Plant:

Perhaps the most significant exhibit in the "Mining Gulch" was the fuel-testing plant conducted by the United States government under the immediate direction of the United States geological survey. The operations of this plant have attracted the attention of the industrial and scientific world. Its installation, considering the short time allowed for its preparation, was remarkably complete. It included an efficient boiler and engine plant,

housed; coal washery with crusher, dryer, conveyors; gas producer equipment and gas engine; two briquetting plants; three coke ovens and a thoroughly equipped chemical laboratory for analyzing coals and lignites and for making calorimetric observations, besides other auxiliaries. This equipment was supplied by manufacturers of the respective apparatus and material and installed as exhibits in service.

A committee appointed by the director of the United States geological survey consisting of M. R. Campbell, Edward W. Parker and J. A. Holmes, superintended the investigations the scope and character of which, according to the provisions of the Act of Congress authorizing the work, embraced the analysis and testing of the coals and lignites of the United States to determine their fuel values and the most economic method of their utilization.

Under this authority and direction, a series of tests relating to the discovery of controlling facts in fuel values and treatment was conducted. These investigations included first an exhaustive chemical analysis of various coals of the United States, also washing tests on these coals as well as coking tests, producer gas tests, steam tests and briquette tests. The results obtained were of such value as to merit the continuance of these tests by the United States government under the immediate supervision of the United States geological survey.

The data accumulated during the period of the Exposition has been reviewed with great care by specialists and engineers throughout this country and Europe. The chemical analysis of the coals examined points a way to a more accurate practice in relation to the estimation of coal values and the purchase and sale of coal for fuel. The washing tests demonstrated that by the expenditure of a few cents per ton the quality of ordinary mine-run coal may be materially improved by this simple process. The result of the coking tests has been the discovery of the fact that many of the so-called non-coking coals may be successfully coked by improved methods, also that the quality of ordinary coke may be raised by the introduction of pitch and other elements. Important information relative to the by-products of coal and their recovery and utilization was also obtained.

Not the least important of the tests conducted were those covering the improved operation of the newly developed power generating agency, the producer gas plant. The experiments demonstrated that over $2\frac{1}{2}$ times as much energy may be produced from a given amount of coal through the producer gas equipment as is yielded by the same amount of coal consumed under a steam boiler. The tremendous significance of this fact will not be overlooked. If it can be shown to the industrial world that the producer gas plant is as capable as indicated and that its operation is reliable, the revolution which will follow will be epoch-making. To ascertain all of the conditions affecting and governing the operation of the producer gas equipment, as well as to discover facts which may suggest improvement in the device employed, was a main purpose of these investigations. A not unimportant feature related to the use in the producer gas plant of the numerous beds of lignites and peats now lying practically unavailable in different sections of the country.

The steaming tests were conducted for the purpose of securing accurate data covering the action and result of various coals consumed under steam boilers. The great waste of energy in coal consumption is one of the deplorable facts of industry. Only the smallest portion of the total energy in a ton of coal—less than 5 per cent—is translated into finally applied power through steam according to present practice. An intelligent endeavor to recover even a small portion of this waste energy will not be considered misdirected.

The purpose of the briquetting tests was to discover what are the possibilities in the direction of improving slack coals and lignites by the briquetting process now successfully employed in Europe. The results obtained in these tests were considered very satisfactory and will undoubtedly result in more effective operation of briquetting plants in this country in the future.

In addition to the important exhibits of literature upon the subjects of mining and metallurgy made by the states of the Union and foreign countries, a number of other representative displays of this character were presented. Notable among them was a series of publications relating to the geology, topography and metallurgy of the United States, in-

stalled by the United States geological survey. The American institute of Mining Engineers presented a collection of publications upon mining subjects; the New York state museum, Albany, N. Y., presented publications on paleontology; George Frederick Kunz, New York, made an exhibit of valuable publications on gems and precious stones; David T. Day, Washington, D. C., of publications of mineral statistics, and the American Ceramic Society exhibited numerous publications. The press representing the mining and associated industries and trades contributed files and publications, some of notable interest.

States and Territories:

The exhibits made by the states and territories of the Union were installed and maintained under the direction of representatives of the various state commissions. In all, fifty states and territories participated in the Mines and Metallurgy display, chiefly with handsomely installed collective exhibits. In practically every case, these collective exhibits were of comprehensive and superior character, including in the whole every variety of metallic ores, together with common and rare minerals, systematically presented. The items of the state exhibits were supplied by departments of the respective state governments, educational and public institutions, sections, counties, associations, private companies and individuals.

The great iron deposits and industries of Alabama were amply and effectively represented, as were its fuel deposits. A striking feature of the installation of the exhibit was a colossal statue of Vulcan, 66 feet in height, made of Birmingham cast iron, exhibited by the commercial club of Birmingham; towering far above the surrounding areas, the statue reached to the roof of the palace of Mines and Metallurgy. An interesting set of reports on Alabama geology was presented by the Alabama geological survey which also offered a collective exhibit of the cement making and lithographic limestones of the state, of cement and pottery clays, and of ochre and kaolin.

The mineral resources of Alaska, which have contributed so materially in the last decade to the wealth of the country, were illustrated by interesting exhibits installed in the Alaska pavilion. The displays of precious ores, gold and silver were supplemented by collections of industrial ores and minerals, especially including tin ores, coal, petroleum and marble. With its surface but touched, Alaska already offers a variety and abundance of mineral wealth superior to that possessed by many important nations of the world,

Among the state exhibits marked by simple yet effective installation was that of Arizona. Well selected and neatly arranged cases and wall shelves served to display well its excellent collections of ores and minerals.

Arkansas assembled a representative display of its mineral resources which was attractively installed. Its valuable coal deposits and extensive coal operations were fittingly represented, as were the industrial ores (including zinc) and building stones of the state.

The great natural resources of California were fully represented by excellent illustrative exhibits of precious and industrial ores and minerals and the processes and appliances employed in their production and preparation. A special exhibit of gold ores was made by Nevada county. A model of a gold five-stamp mill and a model of a gold cyanide plant, each of large size and in operation in the palace of Mines and Metallurgy, were prominent features of the exhibit. Other models, with photographs and literature, further augmented and illustrated California's extensive display, which was most capably installed. A feature of the installation was an elaborate arch constructed of a variety of building materials of the state. In the "Mining Gulch" a complete and extensive operative milling and concentrating plant was installed, to which reference has already been made.

The exhibit of Colorado was most interesting and representative. In this display the classification of the department of Mines and Metallurgy was carefully adhered to and details of installation most effectively carried out. The systematic arrangement of the exhibit was the cause of much favorable comment. Being the leading gold producing state it was natural that Colorado should present a handsome display of this precious metal, which

included a large exhibit of native gold from the world-famed tellurides of Cripple Creek. All recognized minerals that abound in the Rocky Mountain range and which have given to Colorado such a high reputation as a mineral state were presented in effective and attractive setting. The enclosing facade of this exhibit was very handsome, being composed of base panels of onyx and marble, surmounted by polished columns of marble, onyx and rhyolite, handsome exhibit cases resting on the low panels between the columns completing the enclosure. The arrangement of the interior was equally attractive, the handsome cases and effective groupings of the exhibits attracting much favorable comment. A very instructive exhibit was made in the "Mining Gulch" by the Colorado school of mines.

Connecticut was represented by exhibits of mineral water and quartz for wood filler made by private concerns.

A display of Delaware limestone and lime made by a private company represented that state.

From the District of Columbia was sent an exhibit of marble, installed by a private company.

Florida was represented by exhibits of mineral waters, made by private companies. A very attractive and interesting exhibit was made by Georgia, consisting principally of ornamental building stones, marble, granite, pyrite, serpentine and sandstone.

The display also included a collection of ores of the state, gold, copper, lead, iron, manganese, gems and precious stones, bauxite, clays and other minerals, and a series of photographs, transparencies and publications made by the Georgia geological survey. The graceful marble columns which outlined this exhibit attracted favorable comment.

Idaho's exhibit of precious and commercial ores was indicative of the extensive mineral wealth of that state. Besides numerous samples of gold, silver, lead and copper ores, this display which was neatly arranged included concentrates of these ores, a model of an ore mill and mining equipment and photographs, maps and views of various sections of the state.

The extensive and varied mineral resources of Illinois were represented by an interesting exhibit most handsomely installed. Prominent in the Illinois display were examples of coal, building stones, clays, ochre, macadam, silica, iron ore, zinc, lead, fluorspar, fluorite, shale, lime and gypsum. A number of special exhibits of mineral water were also made by private concerns.

Indiana emphasized its fuel resources in the form of a great wall and tower of coal. Its renowned wealth of excellent building stone was also represented by handsome exhibits including graceful examples of finished oolitic limestone. Exhibits of the state's well known mineral waters were also made, as of its clays and clay products. The Indiana geological survey presented an exhibit of publications illustrative of the mineral resources of Indiana. Representative exhibits of Bedford stone, also of coal, were installed by the Indiana exposition commission.

Coal, coke and oils were the prominent items of the exhibit made by Indian Territory. The display included a systematic collection of all of the territory's mineral resources and examples of building stones.

The facade of the Iowa exhibit was illustrative of its wealth of building materials, consisting of a low brick wall with stone trimmings and a portal guarded by two beautiful columns of marble. Coal and clays were prominent in the exhibit.

Kansas made a handsome and comprehensive exhibit which was effectively installed and enclosed by a graceful facade of columns and balustrades. Coal, oil, salt, zinc, lead, clay and gypsum products were prominent features of the display. The facade was of gypsum plaster, a product of the state.

The mineral wealth of Kentucky was displayed in handsome setting. Its coal resources were emphasized in the portal and wall of one enclosing facade, while its variety of building materials was indicated in the other.

Salt, sulphur and oil were the principal features of Louisiana's display. A salt figure designated "Lot's Wife" was a prominent item. Interesting exhibits of the salt and sulphur

industries were presented. Clay products, building and ornamental stones, iron ore, coal in briquettes, petrified wood, mineral waters, and a topographic map of Louisiana were among the other exhibits.

Exhibits of mineral waters and of clay products of Maine were made by private enterprise.

An elaborate display of building and ornamental stone and road materials was made by Maryland.

Alundum, India corundum stone, slates, clay products and mineral waters from Massachusetts were exhibited by private concerns. An exhibit of photographs of its laboratories was made by the mining school of Harvard University.

The great mineral resources of Michigan were well represented in the exhibit of that state. Iron and copper (native and crystallized) ores naturally occupied prominent positions in the display illustrative of the great deposits of these ores in Michigan. An interesting collection of mining views and photographs, a miniature blast furnace plant, models of stamp mill and rock and shaft houses, maps of Lake Superior iron and copper districts, operative copper smelting furnace, and a collection of literature and maps relating to the geological, mineralogical, paleontological and topographical features of Michigan and illustrative of its quarrying and mining industries were important items of the exhibit which further contained finished metallurgical products. The handsome installation facade which enclosed the display was made of Michigan cement. The details of installation of the extensive display were very effective.

The Minnesota exhibit was handsomely installed and illustrative of the varied and valuable mineral resources of that great state. A feature of the installation was a low balustrade of polished cut stone enclosing the two open sides of the exhibit, showing the different varieties of Minnesota stone, and including panels of brick and marble. A large polished granite column 3 feet in diameter and 20 feet high, sent from the state capitol, together with 7 large stone faces set in cement, illustrated the appearance of the various stones as used in construction. On the wall of the exhibit booth were three large groups of pictures showing photographs of mines and quarries in the state; two maps of the Mesabi and Vermillion iron ranges and a chart showing the output of each mine in these regions; also a large photograph of the city of Duluth. A model, complete in every detail, of the Fayal mine of the Mesabi range, one of the largest producers in the world, was one of the features of the exhibit. A model of the harbor and of the city of Duluth 28 feet square on a scale of 200 feet to the inch and with every house and building shown in its proper location, also with 130 vessels in the harbor loading and unloading, was another very interesting feature. Detail models of a section of an ore dock with ore cars were shown. Eighty different samples of ores with analysis of each and output of mine indicated were presented: also a large collection of the Indian pictograph stones from the pipestone quarries in the state, together with a famous pipestone mantel. The mineral exhibit included iron ores-specimens from the Mesabi and Vermillion ranges-limestone, sandstone, granite, marble, greenstone, jasper, slate, quartzite, taconite, clays and a collective exhibit illustrating structure, modes of occurrence and origin of ore deposits in Minnesota. A finished product of the iron ore of the state in the shape of a complete high pressure working steam engine made by the mechanic art high school students of Minnesota was an interesting feature.

The exhibit of Mississippi included specimens of clays, marls, sands, building stones and mineral waters.

Missouri's Minerals:

Naturally the exhibit of Missouri was extensive and representative, as well as most attractively installed. It was indeed one of the most comprehensive and well-arranged and presented exhibits of the mineral resources and activities of a great state that has ever been seen at an exposition. The display was enclosed in a handsome skeleton façade of structural iron, the top of which in its entire extent formed an elevated roadbed or an elaborate work-

ing miniature railway. This railway was provided with full equipment of locomotives, cars, switches, and was actively operated in connection with a complete miniature coal mining plant which was a conspicuous feature of the exhibit. Elaborate portals penetrated the facade at the corners and in the sides, and led to the interior of the display, the items of which were effectively disposed in individual and attractive groups, cases, pavilions, and other settings. Among the assembled materials were examples of iron, copper, lead, zinc, silver, manganese, nickel and cobalt ores, coal, baryta, tripoli, glass sand, asphalt, mineral oil, asphaltic sandstone, marcossite, pyrite, greenockite, dolomite, calcite, aragonite, quartz, asbestos, pyromorphite, jasper, agate, onyx, stalactites, fluorite, crystals, lithographic stones, building stones, ornamental stones, lead and zinc concentrates, pig lead, pig iron, spelter, mineral waters, hydraulic cement, lime, clays, kaolin, tallow clay, fire brick, sewer pipe, tile, pottery, terracotta and other clay materials. The Missouri school of mines at Rolla presented an exhibit of road making materials with models showing their use, also of shop work and or chemical compounds made by students. This interesting special exhibit also included specimens of ores and crystals, a separator in operation, diamond saw and rock section machine in operation, assay laboratory and chemical laboratory in operation, model of concentrating plant in operation, mine pumps in operation. A great geographical relief map of the state occupied a prominent position upon the exterior of the facade of the exhibit. A broad endless belt of Missouri mining views, containing twelve hundred in all and handsome pavilions of clay and cement were other features. Statistical charts, literature, maps, photographs, and views supplemented the material items of the display. In the "Mining Gulch" was installed a Missouri mineral pavilion, also a lead and zinc concentrating plant in operation.

Montana's extraordinary mineral wealth was adequately and attractively displayed. Precious and commercial ores and metals and building and ornamental stones were prominent features of this exhibit, the installation of which was unique and effective.

Among the items of Nebraska's exhibit were clays and clay products-bricks, tiles, building stones, limestone, rubblestone and sandstone; coals, shales, road materials, mineral paints, paint earths, polishing earths, cement materials, cement sands, chalk, lime, lime rock, fossils and various minerals.

Nevada presented an exhibit which was neatly installed, comprehensive, varied, and interesting. Borax and sulphur were prominent items.

Exhibits of abrasives and mineral water from New Hampshire were made by private companies.

An excellent exhibit of its mineral resources and the methods employed in preparing them for utilization was made by New Jersey. Clay and clay products were prominent in the exhibit. A systematic collection of raw and burned clays with resistance tests on the finished materials and a model of a clay washing plant were presented. Restorations of extinct vertebrates effectively mounted were a unique feature of the exhibit, the immense skeleton of one of these animals rising far above and dominating the section occupied by the state.

A comprehensive and most creditably installed exhibit was made by New Mexico, the materials being presented in a handsome series of geological cabinets scientifically classed. Coal, iron and zinc ores were emphasized in the exhibit, as were also gold, silver and copper.

Building materials, including a remarkable variety of structural and ornamental stones, brick and other clay products, slate, cement, with methods of manufacture and use, were prominent items of the exhibit of New York in the palace of Mines and Metallurgy. An interesting feature of the display was a slab of Cambrian sandstone, 33x10 feet, a section of the primordial beach of New York upon which were distinctly apparent trails and impressions of prehistoric mammals. Instructive collections of geological and other maps, charts, publications, photographs, statistics relating to the geology, mineralogy, paleontology, topography, mining, quarrying, metallurgy, preparation of mineral products and development of the water resources of the state were also presented.

North Carolina made a representative exhibit of its abundant mineral resources which

was systematically arranged and effectively and attractively presented. The important monazite occurrences and the monazite industry of the state were instructively illustrated, as were its deposits of kaolin, talc, mica, zircon, corundum, its building stones and its semi-precious stones and gem minerals. The geological survey of North Carolina presented a comprehensive collection of the minerals and ores of the state. The state museum presented an even more extensive collection-the two displays including over a hundred varieties of ores and minerals. Other special exhibits of a number of these and other materials were made, including clay and clay products and tin ores and concentrates. A collection of photographs, models relating to the geology, mineralogy and topography of North Carolina completed its thorough and comprehensive exhibit.

A very attractively installed exhibit represented the mineral resources of North Dakota. Prominent in this state's display were its clay products, brick and pottery. Its building and ornamental stones were also well represented.

Ohio presented a handsome exhibit which was simply but effectively installed. Natural and artificial building stone was prominent in this display, being employed at special points in connection with its installation. Sandstone, limestone and granite were among the varieties of native stone shown. Numerous examples of clays and clay products of a high order were presented.

The mineral resources of Oklahoma were represented by a well selected and displayed exhibit of which building materials, including building and ornamental stones, clays and clay products, sand, lime and cement were an important feature. Varieties of sandstone, limestone and granite were presented. The clay products shown were of great variety. An excellent exhibit of gypsum was made, also of oils.

The varied and important mineral resources of Oregon were indicated by carefully selected exhibits attractively installed. Prominent among these were examples of gold, silver and copper; numerous specimens of gold quartz, gold nuggets and free gold ores were a distinctive feature of the exhibit.

Pennsylvania's Coal:

One of the most important and attractive exhibits in the palace of Mines and Metallurgy was that made by Pennsylvania. This display received a special gold medal from the international jury for its representative and comprehensive character, its effective arrangement and generally superior installation. A handsome facade of low panels marked by graceful columns and monumental portals surrounded the exhibit, one of the main portals being made of coal-a handsome arch with supporting towers. The displays were arranged in groups, cases and pavilions, with excellent effect. The exhibit of coal was naturally a principal element and was one of the most instructive ever presented at an exposition. The display of other mineral products was highly representative of the state's resources of such character. The coal exhibit in addition to a systematic collection of all varieties of this product in the state made by leading coal companies and railroads included a remarkable series of photographs, drawings and models of mines, mining methods, machinery and equipment, notably two large sized models, one of a coal tippie, the other of a coking plant with houses of operators and workmen, which attracted general attention. An extensive exhibit of clays, including also paint clays, china clays and paper clays was made, as well as of clay products and processes of manufacture. Fire clay was shown, crude, calcined and in bricks. The cement exhibit embraced specimens of cement rock, ground rock, clinker and finished cement. A large variety of building and ornamental stones was presented, including limestone, sandstone, brown stone, blue stone, freestone, gneiss, granite, marble, black marble, green marble, Belgian blocks and concretes.

Exhibits of lime, iron ore, mineral waters, and copper were made by Porto Rico in connection with its general exhibit which was installed in the palace of Agriculture.

The precious ores were prominent in the exhibit of South Dakota, which was hand-

somely installed. A low stone facade with elaborate portals, statistical columns, enclosed the display, the materials of which were arranged in systematic groups. Gold, silver, lead and copper ores were shown in many specimens and various forms of occurrence, as were numerous other ores and minerals. A number of varieties of building and paving atone were presented. A systematic collection of minerals was installed by the South Dakota school of mines. A number of relief maps and an excellent collection of transparencies, well displayed, gave further evidence of the rich mineral resources of the state. An operative exhibit in the form of a gold reduction plant, representative of methods and equipment employed in the gold mining industry in the Black Hills of South Dakota was made by the Black Hills mining association of Deadwood, in the "Mining Gulch."

Exhibits of iron ores, granites, paper and pottery clay and of mineral waters of South Carolina were made by private companies.

An interesting exhibit which was attractively installed with a unique facade of marble panels set in loose coke and ore rubble was presented by Tennessee. A handsome pavilion of marble was prominent in the center of the exhibit. Iron ore was a principal element of the display, being represented by numerous samples. The exhibit of building and ornamental atones was extensive, including sandstone, limestone, marble and onyx, many varieties and colors of marbles being shown. The exhibits of coal and coke were also representative and important. Exhibits of iron and copper metallurgy showing the evolution from ore to pig matte and products were also made. In the "Mining Gulch" an arch of Tennessee coal and a pyramid of Tennessee phosphate were installed.

A highly illustrative exhibit was made by Texas, the items of this display were installed in and upon handsome drawer cabinets arranged in systematic order and made conveniently accessible for public inspection. Petroleum and its products were a prominent feature of the display, as were also building and ornamental atones and quick silver, one exhibit of 1200 pounds of quicksilver and cinnabar being shown.

The large, interesting and impressively installed display of its mineral resources presented by Utah attracted much attention. Important exhibits of gold and iron ore were offered, also of silver, lead, zinc, copper and manganese ores, coal, coke, clay and clay products, building and ornamental stones and cement. Other minerals and mineral products were shown in great variety. Collections of maps, charts, photographs and publications of the mineral resources and mining industries of the state were also presented. A prominent feature of the exhibit was a working concentrating plant installed and equipped complete by the state.

A handsome exhibit of Vermont marbles and an exhibit of Vermont mineral waters were made by private companies.

The mineral resources of Virginia were well represented by a handsome exhibit in the palace of Mines and Metallurgy.

An exhibit of mineral resources by counties was made by Washington. Building and ornamental stone, gold, silver and copper ores, coal and coke, clays and products were among the principal materials shown.

Coal and coke were the dominating features of West Virginia's exhibit, an elaborate display of these resources and industries being made. The massive material exhibits of coal and coke were supplemented by excellent maps and models, a large model of a coal mine, with mining villages and coke ovens, being an extraordinary feature. The display included specimens of ferro-chrome, ferro-manganese, ferro-aluminum and ferro-titanium.

A well selected exhibit of its resources was presented by Wisconsin, in which building, and ornamental atone and iron ore were prominent. Limestone, red and white sandstone, and granite were among the varieties of the former shown. Clay and clay products, lead and zinc ores, hematite, marl, quartz, sand paper, feldspar, macadam, mineral paint and graphite were other items of the display. A unique feature was a model of a cross section of earth from the Baraboo iron district showing structure and occurrences. Maps, photographs, models and literature were also presented.

Wyoming's mineral wealth was illustrated by an extensive exhibit. The precious and commercial ores were shown in variety, including gold, silver, lead, zinc, copper, iron, galena, hematite, nickel and magnetite.

Foreign Exhibits:

Twenty-nine foreign nations participated in the exhibit of the department of Mines and Metallurgy. The greater number of these countries installed collective displays in the palace of Mines and Metallurgy. The foreign exhibits were chiefly assembled under the direction of the respective foreign commissions, individual displays being presented, however, in special cases. While the difficulties of transportation operated to reduce the proportions of foreign exhibits in certain cases, this condition also contributed to refinement and more representative selection. The displays or the principal participating nations were instructive and interesting in a high degree.

The important resources of the Argentine republic were indicated by a well-presented exhibit. Onyx, lime, sulphur, mineral waters, salt and clay products were notable items of the display. Specimens of borate or lime, boric acid and borax, gold and copper ores, coal, mica, asbestos were also presented, in addition to a systematic display of the minerals of Argentina, with reports and maps made by the national division of mines and geology. A comprehensive collection of combustibles, coal, peat, ozocerite, lignite, a general map of Argentina showing the coal and petroleum districts, perforations, were shown. These items with a series of albums of photographic views of artesian wells, borings, geological sections, and a collection of literature on the coal, petroleum and water resources of the country were presented by the water and coal survey bureau of Argentina.

The exhibit of Austria was limited to an excellent collection of maps, charts and literature pertaining to the geology and mineralogy of that country. An exhibit of metallic ores from Austria and of several exhibits of Austrian mineral waters were installed in the palace of Agriculture.

Belgium made a very representative exhibit of its mineral resources and the methods of their production, treatment and utilization in the Belgian national pavilion. Coal, coal mining and coal products, also metallurgical products and metallurgical processes and products were principal features. Illustrative exhibits of this character were made. Monumental, ornamental and building stone, cement and products, cement materials, lime rock, roofing slate, metallic ores, mineral luminants, mineral waters and phosphates were prominent in the display. Interesting exhibits or plants of mining equipment and machinery, including drawings and specimens of safety lamps, of assaying equipment, or methods and measures for preventing accidents in mining operations, statistics in this connection, and literature and reports bearing upon the mineral resources and mining industry in Belgium were presented.

A large exhibit of its extensive mineral resources was made by Brazil, which was handsomely installed in the foreign section of the palace of Mines and Metallurgy. The items of the exhibit were effectively arranged in cases and upon pedestals. Industrial and precious ores were prominent among these, being presented in extensive variety, including gold, silver, copper, lead, zinc, iron, manganese, and cinabritic ores. Building and ornamental stones, clays and products, natural mineral paints, ores, bituminous, shale and mineral oil extracted from same monazite sands, diamond gravels, crystals, agates, diamonds, amethysts, topaz, rutile, tourmalines and mineral waters were important items of the display.

An exhibit of Bulgarian mineral resources was included with the general exhibit of Bulgaria in the palace of Varied industries. Coal, ornamental stone, marble, granite, and copper were the chief items of the display, which contained also specimens of syenite and

manganite ores and engraving stones.

Canadian Ores:

Canada made an extensive and handsome exhibit in the palace of Mines and Metallurgy. A principal feature of the display which was elaborately installed in detail and as a whole was a systematic collection of Canadian ores and minerals arranged by the Dominion government, including gold, silver, lead and copper, nickel, cobalt, coal, petroleum, mineral fertilizers and pigments, salt, asbestos, mica, feldspar, graphite, gypsum, abrasive materials, corundum, gems and precious stones, ornamental and building stone, slate, clay and cement. Numerous other minerals were displayed in the Canadian exhibit. Examples of gold ores from the Klondike and from Nova Scotia, also of the industrial ores, including nickel, ornamental and building stone, asbestos, mica and coal were especially notable. Specimens of ferro-chromium, ferro-silicon and phosphide of iron, also maps, models and publications relative to the mineral resources and activities of Canada were presented.

An important exhibit of graphite and plumbago was made by Ceylon in its interesting display which was neatly installed in the palace of Mines and Metallurgy. Aqua marines, sapphires, rubies and other gems were attractive features of this display. Specimens of mica, corundum and pottery clays, a model of a plumbago mine and official literature on the geology and mineralogy of Ceylon were other notable items.

An exhibit representing the mineral resources of China was embraced in its general display installed in the palace of Liberal Arts. Among the more important features of the mineral display were coal, coke, and metallic ores, limestone, cement, clays and clay products. Specimens of plumbago, asbestos, ornamental marble, and an exhibit of pig iron and iron and steel bars and angles were presented.

Cuba offered an interesting exhibit of its mineral resources in the palace of Mines and Metallurgy. Prominent in the display were cements and iron ores, manganese, marble and asphalt. Among the other materials shown were zinc and copper minerals, chalk, an exhibit of finished iron and a mineral map of Santiago province. In addition, a systematic collection of Cuban minerals was presented by the Cuban government.

An exhibit of copper from Gebel Nahass, the mountain of copper in Egypt, was made by the Soudan government.

A well selected and effectively installed exhibit was made by France in the palace of Mines and Metallurgy. Representative of its mineral resources were shown important examples of slate and products, radium salts, antimony ores and products, iron ores, zinc and copper ores, bauxite ores, chrome ores and l'antichromine, marble, granite and marble monuments, plaster of paris and fuel briquettes. The exhibit also contained an interesting variety of metallurgical products, some specimens being of a high order of excellence. A valuable series of plans and models of mining devices and equipment and a notable collection of maps, boards, panoramas, graphic schemes, models and publications illustrative of the mineral resources and activities of France were presented in addition to important treatises upon the subject of mines and metallurgy. Some excellent features of installation marked the exhibit which was chiefly disposed in handsome cases and other special and attractive settings. Exhibits of the colonies of France were also presented, including ores and marble from Algeria, statistics of ores from Madagascar, hydraulic lime from La Reunion, soil, tin ore and pig tin from Hanoi, and slabs of marble, mortuary monuments, urns, pit coal and ores from Tinkin; also ores from Djibouti.

A number of important exhibits representing the mineral resources and industries of Germany were made. The exhibit in the palace of Mines and Metallurgy embraced an important series of models, maps, reliefs and publications bearing upon the geological and

mineralogical resources of the country and methods employed in their production, preparation and utilization. An elaborate exhibit of mineral waters was presented in the palace of Agriculture, and a remarkable exhibit of amber, amber products and the amber industry in the palace of Varied industries. A collective exhibit representative of the German watering places was installed in the palace of Liberal Arts, including a diorama of Baden Baden. An exhibit of garnets from German East Africa and a collection of minerals from the same German colony were installed in the German section in the palace of Agriculture. Among the mineral items presented chiefly in the palace of Mines and Metallurgy were clays and clay products, marble and products, glazed stone slabs, grindstones, whetstones, topaz, collection of soil forming stone, and exhibits of fluorite and fluorspar. The steel bells in the German pavilion, and an exhibit of graphite crucibles were the principal items of the metallurgical display. A treatise on the geology and paleontology of amber by Prof. Dr. R. Kleb of Koenigsburg was a notable contribution to the German exhibit which was distinguished for its superior literature on geology and mineralogy.

Great Britain's Mining interests:

Great Britain installed a representative display in the palace of Mines and Metallurgy. Coal, iron, manganese, nickel, cobalt, copper and other ores and marble were prominent among the minerals exhibited. The important feature of the display was a collective exhibit relating to British mining during the past thirty years, made under the direction of the mining department of the home office, London, and comprising material contributed by the principal mining interests of Great Britain. An important collective exhibit of Irish minerals and building materials was presented by the department of agriculture and technical instruction for Ireland. The board of education, geological survey and museum of London submitted a distinguished collection of geological maps and sections, photographs, diagrams, views and models relative to British geology and mineralogy. The geological survey of India also presented an exhibit of maps, charts and books illustrative of the geological and mineralogical resources of India. Models of mining apparatus, safety devices and a series of mining photographs and publications relative to mining and metallurgy in Great Britain were also exhibited. The metallurgical display, which was of a high order, included specimens of pig iron, refined iron and iron and steel products, solid drawn cartridge cases, specimens of electro galvanizing, nickel and cobalt mattes and speiss, cyanides for gold extraction; also exhibits of metallurgical apparatus, plane and photographs of equipment and illustrations of methods and processes.

An exhibit of Guatemala minerals, including gold, silver, lead and copper was made in the Guatemalan pavilion.

Haiti presented an exhibit of its minerals at the Exposition, including coal, lignite, silver, copper, manganese and iron ore, molybdenite ores and red ochre. Part of this display was installed in the palace of Mines and Metallurgy and part in the palace of Forestry and Fish and Game.

A collective exhibit of the ores and minerals of Honduras, including gold, silver, lead, copper, and iron ores, asphalt, coal, opals, was presented in the palace of Agriculture.

Mineral waters constituted the principal feature of Hungary's display in the palace of Mines and Metallurgy, a large variety being presented in effective installations. Exhibits of Hungarian marbles and of magnesite brick were also installed.

An attractive exhibit notable for its excellent variety of ornamental marbles displayed in beautiful forms was made by Italy. Sulphur was also prominent in this display, which contained representative exhibits of mineral waters, salts, graphite, talc, mineral colors, stone, asbestos, asphalt, sea salt, copper ore and iron pyrite. Specimens of certain metallurgical products and an important collection of photographs, maps and publications bearing upon the geology, mineral resources and industries of Italy were presented.

A handsome and comprehensive exhibit was installed by Japan in the palace of Mines and Metallurgy. This display was notable for its completeness, its careful selection and systematic and effective installation. Collections of typical minerals recognized in Japanese mining law and collections of copper from principal mines were presented by the imperial bureau of mines, and collections of rocks, ores, fossils, kaolin, whetstones and phosphates by the imperial geological survey. The exhibits of mining equipment included tools for oil well drilling and mining fuse. Photographs, maps, models, charts, publications illustrating the geology, mineral resources and industries and mining methods and equipment of Japan were also presented. The displays of metallurgical products, equipment, methods, was of first importance, including an excellent exhibit of steel in various forms and stages, model of smelting and refining works, and of oil furnace in smithy. The Japanese display included three distinct and important collective exhibits of mining and metallurgy which were interesting in a marked degree.

A map illustrating the geology and the mineral products of Formosa was installed with the Formosa exhibit in the palace of Agriculture.

A most representative and important exhibit of its mineral resources was presented by the republic of Mexico and capably installed in the palace of Mines and Metallurgy. The display of minerals was extensive.

Exhibits of green stone, limestone and mineral waters from New Zealand were presented with its display in the palaces of Agriculture and Forestry and Fish and Game.

Nicaragua installed an exhibit of its mineral resources in the Nicaragua national pavilion.

An interesting exhibit was presented by Peru in the place of Mines and Metallurgy. In addition to a collective exhibit of Peruvian minerals made by the ministerio de fomento, the chief items of the display which was neatly and effectively installed were copper, gold and silver ores, salt, mineral water, sulphur and coal. A large map of Peru illustrating locations of its mineral resources was a prominent feature of the exhibit.

Mineral waters occupied a prominent position in the exhibit of Portugal in the palace of Mines and Metallurgy. The Portuguese display also contained exhibits of lead, copper and other metallic ores, marble, polished ornamental stones, ochre, and systematic collections of soils and minerals.

An exhibit was made by Siam which in addition to a limited variety of ores, including gold and tin and displays of gems and sandstones, embraced a number of mining appliances and models.

An exhibit of magnetic iron ore from Spain was presented in the palace of Mines and Metallurgy and an exhibit of Spanish mineral paint in the palace of Forestry and Fish and Game.

Exhibits of limestone and granite, also of bicalcic phosphate for fertilizers from Sweden were installed in the palace of Mines and Metallurgy.

The Swiss geological survey at Zurich presented an exhibit of maps, charts and publications on the geology and mineralogy of Switzerland.

Venezuela made an exhibit of its mineral resources in connection with its exhibit in the palace of Forestry and Fish and Game. Coal, gold, silver, copper, manganese, lead and iron ores, asphalt, sulphur, asbestos, slate, marble, talc, clay, crystal rock, auriferous sand, aluminum and ochres were prominent items of the display, which also included a number of mineral fuels.

CHAPTER XV

ANTHROPOLOGY

The Story of Civilization—An Indian School—Patagonians and Pygmies—The Timid Cocopas—North American Groups—Exhibitions and Competitions—Primitive industries—The Filipinos—The Queen's Jubilee Presents—Vatican Exhibits

AT THE Exposition were assembled numerous types of many of the primitive races of the earth. How the American Indian had begun by the exercise of his intelligence and the skill and strength of his body to make the raw materials and the animals of the earth serve his need, convenience and comfort was shown by actual examples. Groups of various tribes from different parts of the earth and of varying degrees of development were presented as in actual life. Some of the tribes were of the lowest existing types, others were fairly adorned in more primitive arts of civilization. Proficiency in the mechanical and even in many of the finer industrial arts was demonstrated by the actual achievements of hundreds of full-blood Indians, students of the Indian colleges and schools.

The Philippine exhibit furnished a complete exposition of the slow evolution of civilization among tribes comparatively adjacent to but isolated from each other when left to their own resources, though in the region of the oldest civilization; also of the effect of contact and mixture of certain races with Caucasian blood and western civilization. A group of African pygmies, some of them of man-eating tribes, brought the collection of primitive races down to the lowest known human stage; the Ainus and Patagonians represented the semi-civilized savages still existing like our Indians in countries dominated by highly civilized races and like the Indians, rapidly disappearing.

In the still exhibits of Anthropology the visitor saw further significant evidences of the slow, tedious evolution of civilization, also of its artistic triumphs. Egypt, the birthplace of society, sent much of its graphic testimony, as did the Vatican of Rome. Queen Victoria's Jubilee presents gave striking indication of the exquisite art of the East Indian peoples, a race of unique institutions and interesting history.

Anthropology Colonies:

While the buildings and the floor areas devoted to exhibits of Anthropology were not so extensive as those supplied for other main exhibit departments of the Exposition, the outdoor reservations, especially if the Philippine section may be included, made the total area of exhibit space employed far exceed that of any other department. In popular interest, also, the exhibits of the department of Anthropology compared favorably with the offerings of the other departments

of the Exposition. The number of people who visited the Anthropology building and reservation, including the Philippine section, was very large. This popular success of the exhibits of Anthropology was most gratifying. But another and more important result attended upon this extraordinary and interesting exhibit, represented in the increased knowledge it yielded of primitive man to the inspecting public and the additional data contributed to the important science of Anthropology. While popular, these interesting-some of them almost sensational-exhibits had a scientific base and value which of course was the promoting reason for their collection and assemblage. The motive of the department of Anthropology was to extend and increase the knowledge of man, his tendencies, and his work. Anthropology is the science of man. As stated by Dr. WJ McGee, chief of the department, an eminent scientist and anthropologist under whose super vision the exhibits were selected and installed: "It deals in the broad sense with all mankind and their attributes. Its aims and purposes are connected with man as an organism, and as the type of the class of living things distinguished by mentality; also it deals with mankind as an assemblage of varieties or races, and as social creatures united by language and law and organized in families, communities, societies, commonwealths and nations." A review of the exhibit from the interesting report of Dr. McGee is appended:

The department of Anthropology finds its reason for being in the fact, first, that an exposition is the university of the masses, and second, that all education leads to knowledge of man. The aim of other departments or the Louisiana Purchase Exposition was to exhibit the works of man; the aim of this department was to exhibit man both as creature and as worker; so that the several departments united in a harmonious whole and jointly represented man and his works. The scope of the exhibit of Anthropology may be generally indicated by the following principal subjects or divisions under which its features were assembled:

Section of Ethnology-Living groups; arts and aesthetic products, industries and industrial products, illustrated by daily life; languages in habitual use; laws or social customs, and beliefs with attendant ceremonies; ethnological collections.

Indian School Section-Model Indian School; elementary education; manual training; class or collective work; Indian band; domestic science and productive industry.

Section of Archeology-Typical collections illustrating races and peoples and the principal stages of human development; special collections from typical areas; developmental or synthetic series.

Section of History-Typical collections of records and relics; collections illustrating the development of the Louisiana Purchase Territory; special collections.

Section of Anthropometry-Laboratory and apparatus for the measurement of ethnic types; records and representations of these types.

Section of Psychometry-Laboratory and apparatus for the determination of typical and comparative psychic characters; records and representations of types.

The principal still exhibits selected and presented under these sections were installed in the Anthropology building, one of the granite structures of the Washington University group. Other interesting exhibits were presented in the Indian School building, the special structure provided for the principal working Indian exhibit and erected and conducted by virtue of special appropriation of the United States government and under the direction of S. M. McCowan, superintendent, also assistant chief of the department of Anthropology. The live exhibits were assembled upon the extensive reservation of the department of Anthropology principally adjacent to the Indian school and lying west of the palace of Forestry, Fish and Game. As assembled and presented to the public, the exhibit of Anthropology comprised, (1) a representation of a limited number of the world's least known ethnic types, races or sub-races defined on the physical basis; (2) a representation of a few

of the world's least-known culture types, of peoples defined on the activital or mental basis; (3) a representation of the principal methods and appliances used in research concerning the physical and mental characters of mankind; (4) a representation of typical evidences of the steps and general course of human progress, including prehistoric vestiges, prehistoric relics, and historical records, and (6) a representation of actual human development from savagery and barbarism toward enlightenment as accelerated by association and training.

Physical Types:

The physical types chosen for representation were those least removed from the sub-human or quadrumane form, beginning with the pygmy aborigines of Africa and including the negrito folk of interior Mindanao and other districts, brought to the Exposition as a part of the Philippine exhibition; the Ainu of Hokkaido or Yezo, the northern island of the Japanese Archipelago, the aborigines of Japan, of uncertain ethnic affinities; a variety of the Amerind race reputed since the time of Magellan to be gigantic and known as the largest type of primitive man, a Patagonian group of the Tehuelche tribe; another Amerind group selected chiefly to illustrate the consistent maintenance of two physical types in a single primitive folk, the Cocopa Indians inhabiting the country about the mouth of Rio Colorado in Mexico; and numerous other illustrations of the varying physical types among North American natives, among them the Pawnee group including Roaming Chief, probably the largest man present upon the exposition grounds; the Dakota or Sioux group representing the powerful and agile type of the northern plains; Pueblo folk, among the smallest of North American natives; dark-colored desert peoples (Pima and Maricopa) notable for agility and endurance, allied to the conquering Nahuatlans or Aztec tribe of Mexico; the shorthand and squat and flat-face natives of California (Pomo); and the singularly light-colored fisherfolk (Kwakiutl and Klakwaht tribes) of humid Vancouver Island. None of the short and well-rounded Eskimo type of form befitting a frigid home and reflecting frequent frosting were represented in the department by reason of the risk to life of Arctic folk attending the average St. Louis summer; though a concession concern on the grounds assumed the risk, to the interest and benefit of many thousands of visitors. Various other physical types were represented in connection with national pavilions or exhibits, or with concessions on the Pike. In the exhibit palaces upon the Philippine reservation and elsewhere within the exposition walls there were numerous typical representatives of the principal varieties of the Caucasian, Mongolian, and Malayan races gathered from all the leading countries of Europe and Asia as well as from modern America, Africa, Australia, and the larger islands of the Pacific region; and in addition, there was a constant stream of visitors from every quarter of the globe. On the whole, the gathering of ethnic types of the genus homo was fairly representative and might have been considered fully so save for the absence of the Australian aborigines, the natives of certain Pacific islands, and a few Asiatic tribes. Even with these defects, the assemblage of physical types of mankind was unquestionably much more nearly complete than was ever before brought together.

Culture Types:

In this division of the department's evolutionary exhibit the African Pygmies were selected in part to represent the maternal family or clan in which the intratribal control resides in an avuncular council, the elder brothers of the clan mothers; though tribal law is partly over placed by the control of full-size tribesmen, much as the industrial arts of the little people are affected by contact and barter with iron-making peoples ever since the iron age dawned, probably in northern Africa some thousands of years ago.

The Ainu were selected to illustrate industries connected with body ward movements, a primitive agriculture which has produced a distinctive form of millet, specialized architecture befitting a trying climate, a most primitive musical system and a bear-cult; and in the hope of acquainting the world for the first time with the full law and faith of a lit-

tle-known primitive folk.

The Patagonians were selected to illustrate the character and use of one of the most effective known primitive devices, the bolas, as well as the maternal or clan organization, and also to reveal their own religious feeling and philosophy.

The Cocopa Indians were selected to represent on the ground a native American agriculture pursued unbrokenly since pre-Columbian times and still producing corn and other crops native to the western hemisphere, thereby illustrating such native lore and legend as those embodied in Hiawatha; they also represent one of the most extravagant known mortuary customs, in which the goods of the decedent are distributed to non-relatives while his house and his body are burned together, so that the people are perpetually impoverished and prevented from gathering in communities; and their marriage and puberty rites are elaborate, while the tribal law is in a state of transition from that of the maternal family to that of the paternal family.

The Kilaokwaht and Kwakiutl Indians were selected not merely as physical types but to illustrate a native type of house designed to fix the social organization and facilitate the maintenance of law, partly by virtue of elaborate totems (or animal tutelaries); this representation of northern Pacific coast culture-types was supplemented through co-operation with the Alaskan commission.

Several Amerind groups were selected partly to exhibit the leading native arts and crafts (such as pottery-making, basket-making, blanket-weaving and skin-dressing), partly to illustrate the organization of the paternal family (or gens). The Pawnee, Wichita, Navajo, Pima, and Kickapoo groups constructed and occupied houses each of a distinctive tribal type; while the Sioux tipis and other structures and fabrics exhibited sacred insignia betokening barbaric philosophies of which some were displayed also in musical or dramatic terpsichorean ceremonies.

The culture types at the Exposition like the physical types were greatly extended by the Philippine exhibit itself one of the most impressive illustrations of alien life and customs ever assembled; also in various state and national exhibits, among which the East India pavilion and the Ceylon tea house deserve note, and by several Pike concessions; while there were numerous collections of alien culture-products such as the Fred Harvey and Benham exhibits in the Anthropology building and much of the collection forming the Queen's Jubilee tributes; also special exhibits in the Japanese, Chinese, Siamese, Belgian, Argentine and other pavilions and the Benguiat museum.

Finally, the typical products of the most advanced art and industry filled the exhibit palaces with a richer and more cosmopolitan illustration of man's creative activity than the world ever saw before, while the attendant laws and languages and philosophies were set forth in other departments especially Education and Social Economy, and with unprecedented fullness in that series of legal and educational and scientific congresses through which the Universal Exposition of 1904 made its most impressive display of the power of man and the force of mind.

The Ainu Group:

The Ainu group comprised nine persons representing four families, all from villages in the governmental district of Hokkaido (including the island known by the same name or as Yezo), Japan; they with their habitation and other belongings were brought to the Exposition by Professor Frederick Starr, of the Chicago University in a notable expedition fully described in a book sold on the exposition grounds. So far as known they were the first of their kind to cross an ocean, certainly the first in the United States. In the year 310 A. D. four "Hairy Men" were, according to the Annals of China, shipwrecked on the Chinese coast; in 650 a few of the same folk accompanied the Japanese embassy to China; but there is no indubitable record of others leaving the Japanese archipelago including Saghalien and the Kuril Islands. Even in Japan they are little known; a small group attended the Osaka

Exposition in 1903 and individuals have occasionally been exhibited in circuses; but of all the Japanese colony of over 600 at St. Louis during 1904, only one person ever saw the Ainu save here. The membership or the group on the grounds was as follows:

Sangea Hiramura.....	Man	57	Piratori	Farmer
Santukno	Wife	54	Piratori	
Kin	Daughter.....	6	Piratori	
Kutoroge Hiramura.....	Man	39	Piratori	Bear Hunter
Shutratek	Wife	37	Piratori	
Kiku	Daughter.....	2	Piratori	
Yazo Osawa	Man	23	Niikap.....	Farmer
Shirake	Wife	18	Niikap	
Coro Bete	Man	26	Sapporo	Servant

Certain of the physical characteristics of the Ainu are strikingly large heads and full foreheads; the eyes are horizontal; the face and features conform to Caucasian standards; the color of the skin also resembles the Caucasian-somewhat darker than that of middle Europe or the United States, though neither yellowish nor brownish so much as grayish or black-toned like that of the Cossack. The men are especially noted for luxuriant and wavy head-hair and beard, and to some extent for body-hair whence the term "Hairy Men."

The Patagonian Group:

The "Patagonian Giants" on the grounds comprised a family party of Tehuelche Indians from the province of Santa Cruz (formerly Patagonia), Argentine. They were brought to the Exposition by Senor Vincente Cane or Buenos Aires. They occupied a toldo, an immense tent opening toward the sun, made of seventy-five or eighty dressed guanaco skins. The group was headed by Chief Guechico about seventy-one years old and Elder-woman Lorensa aged about forty-five, with her eight-year-old daughter Olga, and a bepetted mongrel dog which was viewed as the mascot and acted as the autocrat of the group; in addition, there were sub-chief Sinshel about forty-five, with Colojo about thirty, and two other stalwarts known only by the Spanish names Casimiro and Bonifacio aged respectively about twenty-eight and twenty-five. The men and the matron displayed a massiveness of frame and face and a bigness of body and limb more apparent to the beholder than to the student of statistics.

Pygmy Group:

Nominally Pygmy, the nine persons from Central Africa represented five tribes of which three were full-size. This group was brought to the Exposition and at its close returned to Africa by Rev. Samuel Phillips Verner, president of Stillman institute, Tuscaloosa, Alabama, in an expedition beset with difficulty and executed with remarkable success. Of the nine, one, Kondola forenamed John, came to America with Mr. Verner in 1894 and returned with him to aid in securing the rest; none others had previously left their native range, and except two individuals taken to Italy a quarter-century ago no Central African Pygmies ever before left their continent. The group was hardly typical in the absence of women and children; besides, the two Bakuba boys were commonly confounded with the Pygmies, while the Batwa-self-selected volunteers in a desperate venture-were the stalwarts of their tribe. The party were:

(John) Kondola	Batetela trbe.....	Aged 19
Lumbango.....	Bakuba (or Batubat)	Aged 16
Latuna	Bakuba (or Batubat)	Aged 18
Kalamma.....	Baluba (or Balula).....	Aged 30
Shamba	Batwa (or Mbutu)	Aged 28
Malengo	Batwa (or Mbutu)	Aged 20
Lumo	Batwa (or Mbutu)	Aged 20
Bomushubba	Batwa (or Mbutu)	Aged 16
Otabenga.....	Badinga (Chiri-chiri)	Aged 18

Kondola represented one of the most powerful and warlike tribes of Central Africa; Lumbango is a nephew of the paramount chieftain known as Ndombe, head of the stalwart

tribe and himself of heroic stature; Latuna, the attendant without whom Prince Lumbango might not travel, is of the family of the native premier, Joka. Kamma's tribe has furnished more slaves than any other in Central Africa; he was an incidental attaché to the party. The Badinga tribe (who call themselves Chiri-chiri) and Pygmy just as are the Bushmen or Hottentots though their stature exceeds that of the Batwa of Akka peoples of the Congo and upper Nile valleys; they are notably cannibalistic and Otabenga, like others of the tribe had his incisors filed to sharp points in imitation of the teeth of tutelaries and in token of the anthropophagous habit. He confessed to feasts of human flesh but a few months before his departure from Africa, while his mouth watered at sight of some of the plump colored folk among the visitors at the Exposition. The Pygmies proper were the four Batwa tribesmen among whom Shamba who left a wife and children at home was most typical. The average stature of these with Otabenga was 4 feet 10.3 inches as measured by Verner, or slightly more as measured by Woodworth in the anthropometry test.

The African Pygmies were known to the early Greeks and were mentioned by Homer, Aristotle, Herodotus, Pliny and others though in later centuries these passages were commonly considered to refer to mythical rather than real men. In modern times Portuguese and other explorers discovered the Hottentots, and in 1626 Battel saw little people in the Gaboon country; but it remained for Paul Du Chaillu in 1863, Schweinfurth in 1869, and Wissmann in 1881, with Stanley, Emin Pasha, Sir Harry Johnston and Verner at later dates, to establish the existence of a wide-spread pygmy population in Central Africa and practically prove that the little people are the aborigines of the Dark Continent. Even yet little is known of their habits and habitat save that they live in a sort of mutual toleration with full-size tribes in various localities touched by explorers throughout the central half or larger fraction of the African Continent. Generally they are hunters using javelins and arrows reputed to be poisoned with some iron and copper obtained by barter; courageous and crafty in the chase, they are able to take the lion, the leopard, the elephant, and even the rhinoceros in addition to the strong and swift antelopes and other large game animals of their habitat, sometimes bartering the flesh and skins for salt, woven stuffs and metal. They subsist in part on wild game with various fruits, mushrooms, herbs, berries, and nuts, but are without agriculture. They smoke hemp ceremonially and those about the settlements use tobacco; they are given to ceremonious councils or "palavers" and are devoted to fetishes; but little is known of their faith. They do not weave, work metal, make mats, or use boats; and so far as known their languages are simple and much alike in structure though varying in terms from place to place and always distinct from those of full-size neighbors whose tongues are, however, sometimes acquired.

The group on the grounds spoke five distinct tongues; Kondola and Kamma knew enough of the Bakuba and Batwa speech, and the Batwa enough of these, to permit some conversation; while Otabenga was completely isolated linguistically until he and the others developed a common jargon. The party erected a number of huts in imitation of native habitations, using some materials brought for the purpose and others collected in the forest west of the grounds, all of these being rather more elaborate than the primitive bowers in which the Pygmy at home resides. They left Africa with a number of parrots and monkeys with which they are accustomed to live in harmony; some of these failed to survive the long voyage and the last two monkeys and some of the parrots succumbed on the grounds to lighted cigars and other vicious gifts forced on them by too attentive visitors—a fate from which the pygmies themselves were saved only by dint of constant surveillance. At first charmed by the kaleidoscopic novelty of strange sights and surroundings, the passing crowds and especially the insatiate photographers soon palled on the Pygmies and they held long and frequent palavers with Mr. Verner with the object of hastening their return. When cold rains fell, and chill winds blew in October and November they actually suffered. It required constant vigilance and half cruel constraint to keep them out of close-fitting clothing (acquired like their stock of salt and cheap trunks out of the small coin spoil showered on them by visitors) which would have interfered with the functions normal to their

naked skins and brought serious if not fatal results. So, they left the grounds gladly; but from Teneriffe came back a plaint for the lost luxury and excitement of St. Louis and the Exposition.

Cocopa Group:

Timid and home-loving (never before did any of this tribe journey far from their range), the Cocopa Indians were not easily led to participate in the Exposition; but by living in their villages some months and building on their friendship for the chief of the department, Special Agent E. C. Cushman, Jr., overcame their fears. The party on the grounds comprised Pablo Colorado, bead chief of all the Cocopa bands, with his wife; Tom Moore the next chief in rank, with his wife and two grandchildren; sub-chief Artuckero with his wife; "Cherry" with wife and two children; Chinyun Sacup with wife and three children; Shoki a stalwart man in his prime; Pahup and Ilpuk and Skick young men; Ecsheput a young woman with Annie Flynn, half-breed interpreter-in all nine adult males, seven adult females, and six children. They were domiciled in a native house with framework of willow saplings and roof and walls of tule thatch, these materials having been brought for the purpose; and both men and women made beadwork and the like for sale while the boys and some of the men engaged in competitive archery for coins furnished by visitors, in which they were usually winners over all other tribes.

Vancouver Group:

A highly interesting product of aboriginal culture is the clan-house or tribal temple, i.e., a habitation so constructed that each consanguineal group or family and each person therein has a fixed place within the structure so that the habitation both expresses and perpetuates the social organization or law of the tribe. The best surviving type is the Klaokwakt clan-house built of heavy puncheons and squared logs and decorated with carved and painted totemic devices. With the help of special agents, Dr. George A. Dorsey of the Field Columbian Museum and Dr. C. F. Newcombe of Victoria, B. C., & Klaokwaht group and typical habitation were brought from Vancouver Island to the Exposition. The neighboring Kwakiutl Indians are noted for certain physical characteristics (especially light color of skin) and also for elaborate totemic or heraldic crests carved on great wooden columns and house-fronts; and two members of this tribe with examples of their craft were also brought from Vancouver island. The combined group occupied the Klaokwaht house while their great sea-canoe carved from a single tree-trunk and capable of carrying a crew of forty lay alongside. The Vancouver tribesmen participated actively in the exhibitions of primitive peoples, wearing masks and ceremonial costumes of striking character. The Kwakiutl Indians have practiced human sacrifice and anthropology until recently, and the members of the tribe on the grounds still bear scars of the symbolic cannibalism of their fiducial feasts. The most dramatic ceremony of the Exposition was the cannibal dance performed repeatedly by the Kwakiutl priests with the help of their Klaokwaht neighbors.

United States Indians:

About a score of Indian groups were brought to the Exposition chiefly by the department, including the Indian school. Most of these spent but a part of the exposition period on the grounds, arriving, erecting their respective and unique native habitations, remaining a few months pursuing their regular customs and industries, and then returning to their homes in an order interestingly exemplifying their normal habits of life and keeping alive their own interest in the Exposition. Among the tribes represented were the following: Pawnee group, headed by Roaring Chief; Wichita group, headed by the well-known chief Towakani Jim; Arapaho group, headed by Chief Black Coyote; Sioux group, headed by the

noted Chief Yellow Hair; Pima-Maricopa group, some of the desert peoples of southwestern United States; Navajo group, doughty warriors from the time of Cabeza de Vaca and Coronado to that of Crook and Miles; Pueblo group, including Hopi, San Juan, and Acoma Indians; Kickapoo group, with their unique native bark lodge; Pomo group, the products of whose craft were among the finest seen on the grounds; a large group of Ojibwa (Chippewa) Indians; a Cheyenne group; a group of Osage Indians, and an Apache group distinguished among which was the aged warrior Geronimo who illustrated at once a native type and an aboriginal personage of interest alike to special students and passing throngs of visitors.

Even apart from the groups represented by the department of Anthropology and the Philippine Exposition, the assemblage of ethnic types was notable; with these it was unprecedented. A census of the alien peoples on the grounds was planned but its execution failed in the pressure normal to exposition work. The foreign aliens brought in by the department numbered about fifty; the "old Indians" encamped about the Indian school and brought in chiefly at the cost of the federal appropriations aggregated some 325, and there were during the season about 176 younger aborigines attached to the Indian school as pupils and teachers, so that the aliens exhibited by the department totaled some 550. The Indians on the Pike with the considerably larger number in Cumming's Indian Congress reached an aggregate of perhaps 200. Reckoning the Filinos at 1200, and the Kaffirs, Hindus, Singhalese at 150, the primitive population of the Exposition must have exceeded 2000.

In making provision for the maintenance of the primitive peoples on the Anthropology grounds and in the Indian school a sutlery was established, which was so constructed and conducted as to form an exhibit feature in harmony with the other exhibits of the department. The building was erected and stocked in accordance with frontier standards; and, as on the frontier, it served as a gathering place for Indians, Pygmies, Patagonians, Caucasian visitors and other peoples, and proved a highly attractive exhibit.

The Indian School:

The relics and records indicate that a leading factor in man's development is progressive acculturation, or interchange and unification of knowledge. At first slow and inimical and effected chiefly through strife and conquest, the acculturation of the higher stages is rapid and amicable. Schools replace armies, confederation supplants conquest, and the white man's burden of the ballad becomes the strong man's burden in the political family of nations as in the personal family of kindred. Long an accident of intertribal enmity, acculturation becomes under the principles of constitutional government an intentional and purposeful means of promoting the common weal. The United States government has performed no worthier function than that of aiding our aboriginal landholders on their way toward citizenship. The means and the ends of purposive acculturation as applied to the American aborigines and the actual processes illustrated by living examples were exhibited in the typical Indian school forming the most conspicuous feature of the department. Here parents still clinging to native customs and costumes delighted in the progress and achievements of their children in the arts and industries and even in the language and letters required by modern life. Here the aboriginal maker of moccasins showed (and saw) the contrast between his craft and modern shoemaking. Here the actual transformation from comfortless camp-life into comfortable householdry was illustrated not only by every intermediate step but by the actual passage of individuals and families from the one stage to the other during the exposition period. Here the once bloody warrior Geronimo completed his own mental transformation from savage to citizen and for the first time sought to assume both the rights and responsibilities of the higher stage. Here, indeed, was illustrated in epitome and also in the actual progress accelerated by purposive co-operation, a considerable part of that course of intellectual development which raised man from dull-minded and self-centered tribal existence into the active and constructive and broadminded life of modern humanity.

Exhibitions and Competitions:

During the exposition period it was found desirable to provide special exhibit features from time to time. On July 16th representatives of the alien groups united in rendering a program which attracted to the Plaza St. Louis an assemblage estimated at 16,000 and which proved a satisfactory feature, except that on completion of the program most of the gathering rushed in for closer inspection of the aliens who were extricated only with difficulty. On July 23rd a somewhat more elaborate program was given on the Podium in front of the Government building before an assemblage estimated at 20,000, and this was repeated later before a still larger gathering. On July 30th the department participated freely in exercises of Transportation Day, furnishing examples of various primitive transportative devices which were viewed by more than 60,000 visitors.

August 12th and 13th were "Anthropology Days" at the Stadium, arranged under the direction of J. E. Sullivan, chief of Physical Culture. In the contest and events all the primitive peoples connected with the department and most of the others on the grounds participated freely, presenting a spectacle indeed extraordinary and rare in the records of human experience.

Indian and other alien children of the department were a feature in connection with several of the special events on the Model Playground. Ethnologist S. C. Simms in general charge of the groups and camps and Special Agent Verner experimented with special features at fixed hours in the alien camps; but these events like most others arranged for the primitives were found to involve serious risk to the people and their custodians by reason of the overwhelming crowds brought together and the irresistible crushes sometimes developed.

In connection with the Indian school special features were arranged from time to time beginning with the formal opening on June 1, and these proved highly attractive. In addition, the regular dally schedule provided musical, and other features resulting in considerable gatherings in and about the building at stated hours. The Chilocco Indian band attached to the school and sometimes assigned to special duty elsewhere on the grounds proved one of the attractive features of the Exposition.

In addition to the series of exhibits of aboriginal craft presented in connection with the working groups and sections in the Indian school, a specially notable display of Indian handiwork was made in the Anthropology building by Fred Harvey in the name of the New Mexico Commission; it was a collection of Navajo and other native blankets with basketry, pottery, and ceremonial objects representing a number of western tribes-the articles mainly collected in connection with the establishment of the transcontinental routes of travel while the tribes still retained their native arts and crafts, and continued to exercise their native faiths and adore their native deities. The objects were selected with discrimination at the most favorable time just as the native priests and other custodians first felt the influence of Caucasian culture and were carefully stored; most of them were never before exhibited. Nearly every piece in the entire collection was a gem; competent authorities commonly viewed the assemblage of aboriginal basketry as the finest extant and the assemblage of basketry and pottery as hardly less notable. The international jury of awards fully recognized the excellence of the exhibit.

Other notable collections were designed to illustrate the preservation and improvement of aboriginal motives. Conspicuous among these was the J. W. Benham exhibit of southwestern pottery, basketry and basketry. The Anglo-Saxon pioneer is an iconoclast and, much more than his Latin, or Gaelic or Germanic contemporary, carries with him his own devices unfit as they may be for a new environment and ruthlessly displaces the devices of his forerunners however well they fit the conditions; and commonly it is not until they are gone that he discovers the excellence of native products. Of late years benefactors of our aboriginal landholders are engaged in the effort of making better Indians rather than that of turning out counterfeit Caucasians; as a means to this end they are seeking to preserve and improve native arts and crafts. The Benham collection illustrates this effort

and so earned especial appreciation. Artists, too, of late realize something of the value of the motives native to American soil. Another notable exhibit illustrating the preservation of native artistic motives was installed in the Anthropology building by President Taylor, of the Rockwood pottery. Not all native artistic and industrial motives are good; indeed, the majority are far inferior to those of advanced culture; and the replacement of aboriginal devices by the superior inventions and methods of the white man was abundantly illustrated in the Indian school section in which the artistic and industrial culture of the "old Indians" was shown in contrast with the work of their own offspring trained under white influence.

Probably the most extensive and comprehensive single ethnologic display ever made was the Philippine Exposition in which some 1200 natives representing a dozen or more tribes were assembled and faithful illustrated a wide variety of physical and cultured types. As a whole this assemblage at once rivaled and complemented the exhibits of the department of Anthropology proper; the Philippine exhibits and those of the department co-operating in various ways.

Other notable displays of ethnologic character albeit not related to the department save through comity appeared in the exhibit of Alaska Territory, planned partly in conference with the chief of the department; the Boer War display including a group of Kaffirs in native huts and a large collection of native South-African artifacts; the German East African exhibits in the palace of Agriculture; the exhibits from Siam in the Siamese pavilion and in the palace of Agriculture; the native industrial exhibits from Egypt in the Forestry, Fish and Game palace, and the representations of the Māori (including inimitable paintings of tatu) from New Zealand in the same building; the striking collection of Hindu artifacts in the East Indian pavilion; the esthetic and industrial exhibits in the Ceylon pavilion; the ethnologic display from Formosa (Japan) in the palace of Agriculture; the Benguiat palace of ancient art, comprising the finest known oriental rugs and other products of the eastern loom and forge and bench; and the ethnologic exhibits on the Pike, comprising the Indian Congress, the Cliff Dwellers, the Eskimo Village, Fair Japan, the Chinese Village, Mysterious Asia, the Irish Village, the Tyrolean Alps and Jerusalem.

Archeology and History:

The general view of human development opens a vista extending so far into the past and so widely into the fields of man's activity that the recorded history of any particular province or people seems small in comparison; yet the history of a province or a people forms an effective introduction to the full history of mankind; accordingly the written history of the Louisiana Purchase gave a keynote for the department as well as a motive for the Exposition, and the exhibits were chosen and arranged in consonance with this view. The work was made feasible by the co-operation of liberal institutions and individuals, chiefly historical societies and working historians. This co-operation was the result largely of the efficient efforts of Miss Florence Hayward who as special commissioner had charge of this section of history.

The nucleus was the collection of the Missouri Historical Society, illustrating by manuscripts and books, relics and portraits, maps and sketches, every important step in the development of the metropolis of the Louisiana Purchase Territory and in the growth of the commonwealth with which it has come up; and also illustrating by aboriginal relics the protohistoric development of the district from the times of aboriginal settlement, the building of earthen tumuli and temples, the growth of a primitive agriculture, and the advent of the bison and its hunters, into the period and through the centuries of discovery and acquisition and industrial conquest by white men. The Ohio State Archeological and Historical Society also contributed materially to the evidences of protohistoric conditions and development.

A supplementary illustration of development and conquest from the aboriginal condition to that of a great commonwealth came from the Iowa State Historical department; and collections serving to fill in the details of the general outline were exhibited by the Fran-

co-Louisiana Society, the Louisiana State Historical Society, the Chicago Historical Society, Jesuit institutions and other co-operating exhibitors. The picture of progress so drawn was extended backward into the unwritten past of protohistory or of relics interpreted in the light of observation on peoples of corresponding culture partly by means of the synthetic series, partly by various exhibits representing the period of transition from Indian occupancy to white supremacy. This outline was then perfected by archeologic collections representing the prehistoric period, and the whole was given meaning and color by the presence on the grounds of living peoples with processes and products corresponding to nearly every step in progress betokened by the protohistoric and prehistoric relics. The typical evidences of human development assembled in the department were enlarged by numerous collections in exhibit palaces and pavilions, and especially in several of the state buildings of which some were historical replicas while many contained important historical and protohistoric material.

In addition to the excellent collections of state, individual and institutional exhibits, a series of most interesting displays was made by foreign countries rich in archeologic and historic treasures. Originally classed as pertaining to archeology the rich Brazilian collections were so arranged to represent the present-day ethnology of the great republic on the Amazon. The special assemblage of ancient relics and shells from Sao Paulo told indeed of early prehistoric times, as did an interesting collection from Minas Geraes; yet the bows and arrows, blowguns with poisoned darts, votive and ceremonial devices, canoes, feather-work, shrunken-head trophies, mats and woven belts, and various other products of primitive craft were gathered among tribes still living and serve well to illustrate both pre-Columbian and present times.

The extensive collection provided through the enterprise of the Mexican national commission consisted chiefly of reproductions of noted antiquities and hence attracted the archaeologists of the world who visited the exposition grounds; yet these, too, were complemented by native productions revealing a corresponding stage in mental development albeit produced in modern times; and these in turn graded into modern artifacts (embroidered *camisas* and the like), modern records of the native tongues, and modern literary interpretations of ancient devices.

Of double significance was the collection of native artifacts of Nicaragua classed in the department of Anthropology, though by reason of convenience installed in the Nicaraguan pavilion; for they presented not merely the condition of native arts and crafts found by the conquistadores four centuries ago, but the actual relics of the able aboriginal chieftain Nicaraao, whose name is perpetuated in that of the country.

The Zavaleta archeologic collection from the Argentine republic, fitly described as the United States of South America, was made up chiefly of prehistoric relics and presented a remarkably complete picture of the aboriginal industries of its region; yet perhaps its chief value grew out of the faithfulness with which it represented the life of a native people still surviving—the Calchaqui Indians.

The rich representation of ancient Egypt was rendered peculiarly instructive by a series of life-size groups illustrating the customs and costumes of the times of David and the pharaohs. Of like bearing was the magnificent mastaba, or native tomb, with paintings and hieroglyphic inscriptions identifying the personage originally entombed and indicating various contemporary customs and modes of thought: while the general pictures of ancient Egypt was complemented by the collections installed in the Forestry and Fish and Game palace to illustrate modern life and resources.

The space in the Anthropology building originally assigned to France for the display of West European prehistory was surrendered to a Franco-American institution for a display devoted to the early history of France in America and while archeology lost an interesting exhibit history gained an excellent display without which the department would have been far from complete—for the Franco-Louisiana Society installed in the space a unique assemblage of historical records and documents.

The Vatican Exhibit:

The section of history also presented an important exhibit by the Vatican of Rome. This display, which was authorized by Pope Pius X, was selected by Cardinal Merry del Val and arranged by Father Ehrle, librarian of the Vatican. It was installed in the Anthropology building under the direction of Francisco Cagiati, special commissioner in charge of the exhibit. It comprised many rare documents and parchments from the Vatican archives, including rare editions of books, among which were the famous Greek Vatican Bible, the manuscript of Caesar's *De Republics*, the Vatican and Roman Virgils (manuscript). The exhibit also contained a handsome and rare collection of miniatures, ivories and frescoes and a very extraordinary collection of mosaics, pronounced the most elaborate ever exhibited in this country. The Vatican exhibit was indeed one of the distinguished features of the Exposition.

The Queen's Jubilee Presents:

Another feature of the department of Anthropology and the section of history were the Victorian Jubilee tributes properly called the Queen's Jubilee presents, which were presented in the Hall of Congresses. This rare collection was exhibited by special consent of King Edward VII under arrangement effected by the President of the Exposition Company following the suggestion of Miss Florence Hayward, special commissioner for history. It was handsomely installed and cared for by the British commission to the Exposition under the direction of Colonel Charles M. Watson, commissioner-general, the selection and arrangement of the exhibits having been previously effected in London by Professor Wyndham Dunstan of the imperial institute and Sir C. Purdon Clarke, director of the Victoria and Albert museum, later of the Metropolitan museum of art in New York.

The royal presents included in the collection chiefly consisted of gifts made to her majesty, the late Queen Victoria, on the occasion of the Jubilee celebrations of 1887 and 1897. Of these the greater number came from India where native princes of all grades and representatives of all nationalities and religions vied with each other in offering to her majesty the splendid tribute of her Indian empire. These Indian presents are of great interest, not merely on account of the precious metals and rare woods, ivories and ebonies in which they are often worked, but as showing how in recent years European ideas have influenced native Indian art.

The remainder of the collection included gifts offered by the representatives of the British colonies, many of them richly illuminated addresses often enclosed in caskets handsomely worked in metal or in native woods. A great chair of state, of elegantly carved ivory and an ivory footstool en suite with chair were a striking feature of this exhibit.

Results:

The methods and appliances used in anthropometry and psychometry in measuring the physical and mental characters of men were selected with the purpose of utilizing the opportunities presented by the Exposition for observing and comparing the human types assembled on the grounds. Most of the laboratories were made feasible through the cooperation of educational institutions and manufacturers. It was in this branch of the department that the original or investigative work of the Exposition culminated; and the conduct of the work was a constant source of interest and attraction to visitors, while its results form a substantial contribution to knowledge,

The unbroken tally of visitors to the room containing the Victorian Jubilee tributes exceeded a million, and the partial-tallies on the Anthropology building gave nearly a million and a half. The estimated number of visitors to the Indian School building was above three million. It seems certain that over four million persons made more or less careful

inspection of the alien camps and groups. The current press items and weightier articles inspired by the Anthropology exhibits were conservatively counted as forming a considerable portion of the spontaneous publications pertaining to the Exposition. The full tale of attendance included visitors from nearly every state and some foreign countries who came for the special purpose of seeing the African Pygmies, the Ainu, the Filipinos, the Patagonians, or the assemblage of North American tribes. A feature of the department was a formal "Field School of Anthropology" successfully conducted under the auspices of the University of Chicago, which may be considered the first definite step in co-operation for educational purposes between the permanent university and the temporary exposition.

The exhibit of the department of Anthropology did much to indicate to our half of the world how the other half lives. The assemblage of human types was not only a source of attraction but served serious ends. While gratifying the untrained curiosity which leads even the child to look with wonder on the alien, it satisfied also the intelligent observer that there is a course of progress running from lower to higher humanity and that all the physical and cultural types of man mark stages in that course.

It cannot be doubted that the assemblage of the world's people, of the Universal Exposition or 1904 gave renewed and fuller meaning to the opinion of Pope that - "the proper study of mankind is man"

CHAPTER XVI

PHYSICAL CULTURE

Development of the Human Body—The Olympic Games—A Model Gymnasium—The Stadium—Olympic Lectures—Turners' International Meeting—The Championships—An Experiment in Exposition Organization—The Department an Educational Factor

IF THE study of mankind is man, the study of the body that holds and sustains and is the man cannot be properly left out of the curriculum. This was recognized by the exposition management in the department of Physical Culture. The science of Physical Culture represents the best results of sincere, intelligent and persevering inquiry into the needs of the body. The Physical Culture lectures delivered in the Exposition's course formally inaugurated this important investigation, being supplemented by the physical training demonstrations and the extensive general program of athletics graded rather to produce a wholesome average than to develop individual exaggeration. Physical Culture does not mean athletics. It includes sane athletics. The scope of the department of Physical Culture included the following subjects: training of the child and adult-theory and practice; games and sports for children and adults; equipment for games and sports.

Adequate grounds and buildings were provided, for the first time at an exposition, wherein could be and were demonstrated the advanced stages of the science of physical training of adult and child. The department had equipped for its use and employed to advantage a model athletic field. The participation in the exhibits and program of the department of Physical Culture was extensive. Besides the representation of the United States, foreign countries contributed displays or participated in the active physical competitions. These countries were Belgium, Brazil, Canada, Cuba, France, Germany, Greece, Japan, and Mexico.

The principal feature of the Physical Culture program was the Olympic Games. These games, which constituted the third Olympic series since the revival of the ancient sports of Greece, were conducted in a manner highly creditable to the department of Physical Culture and the Exposition. The privilege of holding the third Olympic meeting, the first on American soil, in St. Louis in 1904 was accorded by the International Olympic committee after the games had been originally assigned to Chicago. Under the Olympic schedule, according to the plan adopted, were embraced all of the athletic and analogous competitions of the Exposition. These included practical illustrations by champion teams and individual champions of all popular sports and pastimes. There were also practical exhibitions of the work of school children of both sexes and of all grades; also mass and individual exhibitions by turners of their systematic work as employed in the development of the child, man and woman, from the ages of ten to sixty-five years.

As a corollary to the actual demonstration and competitions there was organized a physical training lecture course, which brought together the representative authorities upon the subject of physical training. The results of this convention demonstrated and stimulated the advancement that is being made in Physical Culture. The following is from the report of James E. Sullivan, chief of the Department:

The Universal Exposition of 1904 beheld the birth of modern Physical Culture as a science. It is of no little satisfaction to relate this fact and to be able to record that to the Exposition belongs the credit of establishing Physical Culture in co-ordinate position with the other principal divisions of human and social need and activity in formally placing it in its proper relationship to human welfare and progress before the world. The exposition classification which was so thoroughly carried out did this formally and effectively. Director of Exhibits Skiff recommended to the exposition administration for the first time in the organization of expositions Physical Culture be made the subject of one of its principal departments.

The trend of population is toward the cities; and in the city and everywhere else the machine is robbing man of the exercise of labor. The brain through its infinitely numerous and varied creations of invention and device is doing the tasks formerly left to the body and the body is warping with inaction. An adjustment is demanded; the study of our organism has been forced upon all of us; to help us has come the regime of scientific Physical Culture. The growing popularity of athletic sports which have in late years been so generally encouraged by the colleges and which are so rapidly spreading through the public schools of this country is a reflection of the increasing conviction in the minds of bodily weakened perhaps desk bent fathers that their offspring must be encouraged to grow up strong. The spread of the practice of athletics has but well begun. The response to the call of physical competition and wholesome physical training cannot but be universal, as it appeals to the basic force of life. The presence of interest and enthusiasm in physical vigor and comeliness and athletic achievement is the mark of wholesome civilization. Physical Culture properly taught and applied means health and reserve energy for the body which will supply strength necessary to the growing activities of the mind. It further means that great essential to health, morality. Physical training represents a fundamental movement of moral reform. It confronts youth and manhood with vital facts, directly illustrates cause and result, shows the drain of vice, bad habits, neglect and irregularities upon the body. The sound body is the safest guardian of morality and of civilization-so agree teachers and philosophers as well as physicians. Physical Culture is the medium of sound organs and wholesome impulse.

The first decade of the new century finds the world ready to actively support the movement toward intelligent physical training, the principal avenue to which is sane competitive athletics. The records of attendance at the various athletic fields, amateur and professional, reflect this attitude of the public mind. The action of the authorities of the Exposition of 1904 in establishing a principal department of Physical Culture, for the purpose of arranging upon a comprehensive and representative scale an exhibit of its methods, results and possibilities, was therefore not without support in practical considerations, in view of the fact that such a representation would prove of direct and positive attraction to a large portion of the public - constituting the exhibition of Physical Culture one of the notable features of the Exposition. This it proved to be in fact.

Equipment:

The exhibit of Physical Culture was divided generally into three co-ordinate sections: the exhibit of equipment, apparatus, paraphernalia employed in connection with Physical Culture; the exhibit of actual physical competitions demonstrating the result of training; and third the exhibit of the study of Physical Culture, presenting the investigating, scientific

phase of the subject.

In each of these divisions representative displays were made. In the first division, undoubtedly the most important exhibit was that of A. G. Spalding & Bros. The numerous important items of this exhibit indicated an extraordinary mechanical perfection in the manufacture and installation of gymnastic and anthropometric appliances. Physical Culture is rapidly advancing and in the congested sections of the country it is a growing problem how to provide for the new conditions. Gymnasiums are often reduced in size and wholly inadequate on account of the value of real estate in large cities. This means that the apparatus of the past, of a fixed or cumbersome character, must be superseded by appliances which may be rapidly and conveniently handled in a manner to accommodate within limited space the constantly increasing number of boys and girls requiring systematic physical development. The model gymnasium well illustrated this change and the methods and improvements designed to meet it.

The advancement that has been made in the introduction of public playgrounds and their relation to Physical Culture was exploited by the creation of a model playground and gymnasium within the grounds of the Exposition under the department of Social Economy; the model playground and gymnasium being in charge of Mrs. Ruth Ashley Hirschfield. The original idea was to have the department of Physical Culture control the model playground and gymnasium as it is necessarily the first step towards developing a perfect body. However, as several other features were decided upon, allied with the playground movement it was decided to have a separate and distinct model playground and the gymnasium form part of it.

The building and grounds provided for the use of the department of Physical Culture represented an exhibit of first importance. The building was a permanent modern gymnasium structure of large size and handsome design which had just been completed for the Washington University. It was constructed of steel and granite and contained practically every provision of room and fixture for indoor athletics. In this respect it rivaled the installation of many of the great modern athletic clubs of the cities, particularly in the perfection of its gymnasium. The model and perfectly equipped athletic field adjoining the gymnasium building included an amphitheater, or stadium, with seating capacity of 16,000. In carrying physical training to its highest results, particularly in relation to out-door sports and competitions, the athletic fields employed should be so laid out and equipped as to perfectly serve the purpose for which they are intended. The athletic field exhibited and employed by the department of Physical Culture exemplified how all the requirements that go to make up the standard in this line can be fulfilled. The approval received by this exhibit from those who have been studying the subject for over a quarter of a century, together with the amount of knowledge gained by all interested in athletics who inspected it indicate that this model athletic field upon which all of the outside events and competitions were held was one of the most effective and instructive displays submitted by the department.

Olympic Games:

Of the exhibits of physical competition, as illustrative of the results of training and development, the most conspicuous and important were those presented under the general classification of the Olympic Games. These games held in the stadium of the Universal Exposition of 1904 constituted the third Olympic gathering under the auspices of the International Olympic committee of which Baron Pierre DeCoubertin of Paris was the president and to whom was due the idea of the revival of the Olympic Games as well as the organization of the International Olympic committee. The first Olympic Games approved by the International Olympic committee were held in Athens in 1896, the second at Paris in 1900, and it was decided by the international committee to hold the third Olympic meeting in the city of Chicago during 1904. When it became apparent that the Universal Exposition of 1904 was to have a well-established department of Physical Culture, with athletic games of

all descriptions, it was realized that it would not be practicable to have in America during the same year two large competing athletic gatherings. Chicago had organized an association for the conduct of the Olympic meeting and had also appointed committees, and it seemed as if there might be the possibility of a conflict. This, however, was averted mainly through the instrumentality of A. G. Spalding and Frederick J. V. Skiff, both Chicago men. The result of negotiations introduced and directed largely by these gentlemen was that Chicago gave way and recommended to the international committee the holding of the games in St. Louis in connection with the Exposition, which was promptly authorized.

In consequence of this change, the international Olympic committee expressed the desire that all athletic competitions to be given under the auspices of the Universal Exposition of 1904 bear the name "Olympic." President DeCoubertin was promptly notified that this wish would be complied with, as it was, fully, by the official announcement and successful conduct of Olympic championships in all leading classes of athletics.

Immediately after the Exposition Company had secured the right to hold the Olympic Games under the auspices of the department of Physical Culture, the program for the meeting was given active and serious consideration. The department had been created, the chief had been appointed and the international committee, through its president, Baron Pierre DeCoubertin, delegated its powers to arrange the program to the special committee of the Amateur Athletic Union of the United States. This committee met and as far as it could consistently arranged the athletic program in conjunction with the department of Physical Culture. The aid of the American members of the international Olympic committee, Caspar Whitney of New York, editor of "Outing," Prof. Wm. Sloane and James H. Hyde, was also sought by the department and Mr. Whitney gladly at all times co-operated toward making the meeting a success; in fact he aided materially in the organization of the Physical Culture department of the Exposition.

Co-operation of Athletic Associations:

After the conclusion of the preliminary work in connection with the Amateur Athletic Union committee, it was necessary for the department to enlist the interest of the other athletic governing bodies throughout America for it was felt imperative that in order to make the Olympic Games of 1904 a success the official endorsement and co-operation of all representative American athletic organizations were essential. These different athletic governing bodies appreciated thoroughly the great good the Olympic Games would do to all sports in America and organized amateur athletics as a whole cheerfully aided the department of Physical Culture in making the year's Olympic program an unprecedented success. In addition to the Amateur Athletic Union of the United States the following organizations co-operated with the Department: National Lawn Tennis Association; National Golf Association; National Roque Association; National Archery Association; National Association of Amateur Oarsmen, and the American Amateur Fencers' League. Under the direction of the department of Physical Culture these associations assumed the active management of the different championships for their classes of competitions and in each case made the same a success. Co-operation was also sought and received from foreign athletic bodies.

The Amateur Athletic Union of the United States, under whose rules the athletic features were held, deserves praise for the co-operation it extended to the department, as do the individual active associations that make up that body, together with all its allied members.

After the preliminary arrangements were perfected and programs of the games published and distributed the question of the presidency of the Olympic Games received the serious attention of the department. The result of the deliberations was the decision that the most distinguished personality available be secured. Through the efforts of Caspar Whitney, Theodore Roosevelt, President of the United States, was interested in the movement and accepted the honorary presidency, while the President of the Exposition accepted the pres-

idency of the Olympic Games of 1904. The acceptance of the honorary presidency of the Olympic Games by President Roosevelt was a tribute to all concerned in the creation of the Olympic Games of 1904. His acceptance proved conclusively that he approved of the organization, had given the subject a great deal of thought and believed that the successful carrying out of the program meant much to the future success of this country as a strong nation.

Owing to the advanced conditions of athletics particularly in America, the Olympic Games included many classes of competitions. The events in the stadium were inaugurated early in May with an interscholastic meeting, open to schoolboys of the State of Missouri. An open handicap meeting followed for the residents of Missouri and intercollegiate meetings for the colleges of the western territory. Interscholastic championships were also held as were sectional college championships and national college championships, the idea being to select the particular Olympic champions in each class, as it would be manifestly unfair to ask an elementary schoolboy to compete with the preparatory schoolboy and the scholastic champion to compete with the college champion, for changes and conditions make it impossible for all to compete in one clan with any degree of success.

There were held in St. Louis, under the Olympic schedule, handicap athletic meets, interscholastic meets, Turners' mass exercises, baseball, football, international gymnastic championship competitions, championships for public schoolboys, lacrosse championships, swimming championships, basket-ball championships, one of the best rowing regattas ever contested, bicycle championships, roque tournaments, fencing tournament, a special week for the Olympic Young Men's Christian Association championships, a tennis tournament, golf tournament, archery tournament, wrestling, boxing and gymnastic championship tournaments as well as a special culminating series of Olympic Games that decided the world's championships in track and field sports.

Program of the Games:

The department received over four thousand entries for the games embraced in the whole Olympic series representing the United States and other countries and if the team competitions and mass exhibitions be included the number of athletes who participated in the stadium during the year was close to 9000. This was certainly a representation from the numerical standpoint of which all those who were connected with the year's work may justly reel proud. The entry list indicated conclusively the great and universal interest that was taken in the different athletic competitions, and it is confidently stated by those who ought to know that it contained the largest series of entries recorded by any one organization or corporation that has held an athletic meeting or a series of athletic meetings.

The special series of Olympic Games held from August 29th to September 3rd brought together in the stadium the most noted athletes. World's records were equaled and surpassed and the competitions were keen and exciting.

These particular games were made more interesting by the fact that handsome special Olympic souvenir cups were donated to the winners in different principal events. The following is a list of the donors: Marathon race, David R. Francis; 100-meter run, Frederick J. V. Skiff; 400-meter run, A. L. Shapleigh; running broad jump, J. S. Huyler; 1600-meter run, Norris B. Gregg; 800-meter run, Abraham G. Mills; throwing the discus, Isaac S. Taylor; throwing the 56-pound weight for distance, Charles J. Dieges; pole vault for height, H. H. Baxter; throwing the 16-pound hammer, R. Wells, Jr.; for the club scoring the greatest number of points, A. G. Spalding; 110-meter hurdle, Isaac N. Seligman; 200-meter hurdle, J. J. Lawrence; 400-meter hurdle, George B. Parker; 200-meter run, William H. Thompson; running high jump, J. A. Holmes; putting the 16-pound shot, Goodman King; running hop, step and jump, W. J. Kinsella; three standing jumps, Lemp Brothers; lifting bar bell, Corwin H. Spencer.

These principal trophies were won by the following successful competitors: Marathon

race, T. J. Hicks, Cambridge, Mass. Y. M. C. A.; 100-meter run, Archie Hahn, University of Michigan; 400-meter run, Harry L. Hillman, New York A. C.; running broad jump, Myer Prinstein, Syracuse University; 1600-meter run, J. D. Lightbody, University of Chicago; 800-meter run, J. D. Lightbody, University of Chicago; throwing the discus, Ralph W. Rose, University of Michigan; throwing the 56-pound weight for distance, E. Desmarteau, Montreal, Canada; pole vault for height, C. E. Dvorak, University of Michigan; throwing the 16-pound hammer, John Flanagan, Greater New York Irish Association; for the club scoring the greatest number of points, New York Athletic Club; 110-meter hurdle, F. W. Schule, University of Michigan; 200-meter hurdle, Harry L. Hillman, New York A. C.; 400-meter hurdle, Harry L. Hillman, New York A. C.; 200-meter run, Archie Hahn, University of Michigan; running high jump, S. S. Jones, New York University; putting the 16-pound shot, R. W. Rose, University of Michigan; running hop, step and jump, Myer Prinstein, Syracuse University; three standing jumps, Ray C. Ewry, Purdue University; lifting bar bell, P. Kakousis, Greece.

Other competitions proved to be almost as interesting and as extraordinary in results as these special events. Among these were the Olympic Collegiate Championships in which athletes of the principal colleges and universities of the country participated. A handsome silver cup donated by Walter B. Stevens was offered as a trophy in this tournament to the college scoring the highest number of points. It was won by the University of Chicago. The competitions of this series were productive of some extraordinary feats and records.

The mass exhibition of the Turners in which were engaged 3280 participants of all ages and both sexes, from child to adult, representing twenty-nine societies from various cities of this country and Europe, was one of the largest, most spectacular and most representative physical training demonstrations ever witnessed. The program included all forms of calisthenics and gymnastic exercises and was rendered in the individual and mass events with astonishing precision and effect. Some of the gymnastic competitions indicated phenomenal development in agility, skill and strength.

The final results of the Olympic Games proved conclusively what has often been claimed, that the colleges of America will furnish the champion athletes of the future. During the Olympic Games, which extended from May to November, the prominent colleges of America (with the exception of a few of those in the east) were represented by teams of individuals who wore the colors of their colleges or clubs. Out of the twenty-four individual events (the tug-of-war and team race excluded), sixteen were won by college men, and out of the ninety-four men placed, fifty-two never had college training.

The Participants:

The following list of colleges, schools, athletic clubs, turn vereins and Young Men's Christian Associations that were represented indicates the extent and representative character of the participation in the Olympic Games:

Cornell University, Colgate University, Christian Brothers College, Dartmouth College, Hiram College, Iowa State University, Latter Day Saints University, Leland Stanford University, Lewis Institute of Chicago University, Missouri University, Michigan Agricultural College, Oklahoma University, Princeton University, Purdue University, Rose Polytechnic University, St. Louis University, Shurtleff College, Syracuse University, University of Chicago, University of Colorado, University of Indiana, University of Illinois, University of Kansas, University of Michigan, University of Pennsylvania, University of the South, University of Texas, University of West Virginia, Washington University, Yale University.

Smith Academy, Central High School, Manual Training High School, Brown Preparatory School, Brees Military Academy, Temple Preparatory School, Lawrenceville High School, Rushville High School, Oxford High School, Georgetown Preparatory School, Lincoln High School, McKinley High School, Garfield School, Stoddard School, Washington School, Arlington School, Wyman School, Sherman School, Charles School, Marshall School, Emerson School, Clinton School, Hodgen School, Divoll School, Eugene Field School, Marquette School.

The Public Schools, High and Elementary of New York, San Francisco, Pasadena, Chicago and Boston were represented by four hundred and fifteen schoolboy athletes including seven basketball teams.

Chicago Athletic Association; Cambridgeport Gymnasium Athletic Club; New York Athletic Club; Mil-

waukee Athletic Club; Missouri Athletic Club; Xavier Athletic Club; New West Side Athletic Club; Mohawk Athletic Club; Mott Haven Athletic Club; Pastime Athletic Club; St. Louis Amateur Athletic Association; Boston Athletic Club; Shamrock Lacrosse Club; Olympic Athletic Club; Panhellenic Gymnastic Club; Montreal Athletic Club; 74th Regiment Athletic Association, N. Y. N. G.; Young People's Athletic Club; 1st Regiment Athletic Association, M. N. G.; Maryland Athletic Club; National Athletic Club; St. Bartholomew Athletic Club; Pacific Athletic Club; St. George's Athletic Club; Star Athletic Club; Boys' Club of New York City; Western Golf Association; Trans-Mississippi Golf Association; Potomac Archers; Cincinnati Archery Club; Boston Archery Association; Chicago Archery Association; Business Men's Gymnasium of St. Louis, Mo.; Cincinnati Athletic Club; South Broadway Athletic Club, St. Louis, Mo.; Franklin Athletic Club, Cleveland, Ohio; G. N. Y. I. Athletic Association.

St. Louis Turn Verein; Norwegian Turn Society; South St. Louis Turn Verein; Philadelphia Turngemeinde; North St. Louis Turn Verein; New York Turn Verein; Southwest St. Louis Turn Verein; Chicago Central Turn Verein; Turnerschaft, Berlin, Germany; Turnerschaft, Esslingen, Germany; Berlin Turngemeinde, Germany; Berlin Turnratt, Germany; Turngemeinde Wedding, Germany; Turngemeinde Elberfeld, Germany; Solungen Turn Verein, Sollgen, Germany; Concordia Turn Verein, St. Louis, Mo.; Chicago Voerwarts; Kansas City Turn Verein; Davenport Turngemeinde, Iowa; Brooklyn Voerwarts; Turner Tigers, Los Angeles, Cal.; Newark Turn Verein, N. J.; LaSalle Turn Verein, Chicago, Ill.; Norwegischer Turn Verein, Brooklyn, N. Y.; Milwaukee Turn Verein, Wis.; Norwegian Turn Verein, Brooklyn, N. Y.; Cleveland Voerwarts, Ohio; Indianapolis Turn Verein, ind.; National Turn Verein, Newark, N. J.

Central Y. M. C. A., Brooklyn, N. Y.; Central Y. M. C. A., Buffalo, N. Y.; German Branch, Y. M. C. A., Buffalo, N. Y.; Central Y. M. C. A., Cambridge, Mass.; Central Y. M. C. A., Chicago, Ill.; Central Y. M. C. A., Cincinnati, Ohio; Denver Y. M. C. A., Denver, Colo.; Hamilton Y. M. C. A., Hamilton, Ontario, Canada; Joplin Y. M. C. A., Joplin, Mo.; Kansas City Y. M. C. A., Kansas City, Mo.; Kenosha Y. M. C. A., Kenosha, Wis.; Louisville Y. M. C. A., Louisville, Ky.; Los Angeles Y. M. C. A., Los Angeles, Cal.; Lynchburg Y. M. C. A., Lynchburg, Va.; Newark Y. M. C. A., Newark, N. J.; New Orleans Y. M. C. A., New Orleans, La.; Omaha Y. M. C. A., Omaha, Neb.; Central Y. H. C. A., St. Louis, Mo.; Seattle Y. M. C. A., Seattle, Wash.; Sioux City Y. M. C. A., Sioux City, Ia.

Germany was most prominently represented among the foreign athletes, notably in the gymnastic and swimming contests. Canada, Cuba, Greece also sent prize winning representatives.

The Exhibits:

The plan of organization of the Universal Exposition of 1904 in providing for a distinct department of Physical Culture presented an opportunity for the exhibition of material representing the main features of the work of Physical Culture as it is being carried on in all parts of the world. Circular letters outlining the scope and purpose of the plan, suggesting possible lines to be followed in collecting material, and emphasizing the value of such an exhibit to the institution making it and to Physical Culture in general, were sent out to all cities, societies, athletic clubs, Young Men's Christian Associations, schools, colleges and universities which supported work in Physical Culture. Over one hundred and seventy-five exhibits were received, representing different phases of the work of Physical Culture.

Exhibits of city school systems were presented, illustrating the most modern and progressive work being done among school children notably in Greater New York, Chicago and Cincinnati. A very extensive exhibit illustrating the work and equipment of the German Turnvereins throughout the country was made; also of athletic clubs, and Young Men's Christian Associations, including that of Boston in which modern hygienic work had its beginning and got its greatest impetus, and that of Chicago which serves as a model to all of the associations in the country in its methods of combining and coordinating athletic and gymnasium work in its very comprehensive scheme. Exhibits were shown of the work of the most prominent schools in the country for the training of teachers in Physical Culture, also of the great preparatory schools, including Phillips Exeter, Andover and Culver Military Academies, and particularly of the colleges and universities, including a most valuable and comprehensive display of the work at Amherst, the mother of college Physical Culture.

The Orthopedic Hospital of the University of Pennsylvania presented an instructive set of photographs showing application of principles of Physical Culture in cases of deformed and paralyzed children. A collection of photographs showing action, form and facial expression of effort, fatigue, in various athletic competitions loaned by individuals and newspapers, made an interesting supplementary exhibit as did also a handsome collection

of trophies indicating stimulus to and honor in achievement.

Exhibits were made by France, Germany, Brazil, Belgium, Sweden, Japan and Mexico, some of which were installed in the various national pavilions. Among the foreign exhibits mention must be made of the exhibit of Dr. Paul Richter of France who presented what was without doubt the most important collection of statuary showing the various sports of a physical culture nature carried on in that country. Germany's exhibit collectively formed one of the most important of the foreign series while the exhibits of Japan, Belgium, Brazil, Sweden and Mexico were very interesting.

That the ideal of the exposition management in this direction was realized is shown by the number of individuals and institutions that co-operated in the movement and by the character of the exhibits that were sent in answer to the invitation. Prospective exhibitors were invited to send as part of their exhibit any material that bore on the various phases of the work in their particular field. Many exhibitors worked along these broad lines, sending pictures and plans of buildings and fields, statistics of work and results, statements of requirements, relation of instruction to organization of institution, kind and extent of physical examinations, examples of special work such as drawings, dissections or theses done by students or instructors; results of special investigation in child study, special outlines for practical work and many other features that provided material for information and study that could be duplicated only by an extended visit of inspection among the various gymnasiums in the country. In the exhibit were represented all institutions and organizations, with very few exceptions, in which live, progressive work is being done.

Olympic Lecture Courses:

The object lessons of Physical Culture presented by the Exposition were apparent in the exhibits and in the various competitions of skill, strength, and speed, held upon the athletic field. The interpretations of these material evidences of progress and results were given in the lectures delivered under the auspices and program of the department. In these lectures the scientific phases of physical training were discussed, the subject of Physical Culture was set forth as the science that it is, and its curriculum, the progresses of physical training and development and the means and aids to that end were fully analyzed. A great opportunity was thus offered to co-ordinate the various phases of the subject, educational, practical, competitive and scientific, and to give to such its true value and place. To do this was part of the purpose of the lecture course. In the main aim of the department to give an adequate representation of work and progress already accomplished, to stimulate interest and to prepare for sound growth along all lines, these lectures were indeed of great value.

Lectures by the following authorities and upon subjects as indicated were delivered: F. A. Schmidt, M. D., Bonn, Germany, "The Physiology of Exercise;" G. Stanley Hall, Ph. D., LL. D., president, Clark University, Worcester, Mass., "Health as Related to Civilization;" Wm. G. Anderson, M. D., Yale University, New Haven, Conn., "Gymnastic Dancing and its Place in Secondary and Collegiate Schools;" R. Tait McKenzie, M. D., McGill University, Montreal, Canada, "Artistic Anatomy in Relation to Physical Training;" E. H. Arnold, M. D., New Haven Normal School of Gymnastics, New Haven, Conn., "The organization and Conduct of School Games;" C. Ward Crampton, M. D., High School of Commerce, New York City, "The Correlation of Hygiene and Physical Training," and "Some Recent Advances in the Sciences of Physical Training;" George T. Hepbrun, New York City, "The Equipment and Construction of Gymnasium and Athletic Fields;" H. S. Curtis, Ph. D., DeWitt Clinton High School, New York City, "The Playground Movement;" Cassius H. Watson, B. S., Pratt institute, Brooklyn, N. Y., "Muscular Movement and Human Evolution;" Paul C. Phillips, M. D., Amherst College, Amherst, Mass., "Anthropometric Methods;" G. W. Ehler, B. S., Y. M. C. A., Chicago, Ill., "The Adaptation of Physical Exercises to the Modern Conditions of Life;" Jakob Bolin, New York City, "Developmental Athletics;" James E. Sullivan, chief, dept. of Physical Culture, "Sketches of the Development of Athletic implements;" David F.

Lincoln, M. D., Boston, Mass., "The Treatment of Feeble-Minded, with Special Reference to Their Education in a Public School System;" Frederick J. V. Skiff, Director of Exhibits of the Exposition and Director of Field Museum of Chicago, Ill., "The General Advantage of Athletic Exercises to the individual;" Joseph E. Raycroft, M. D., University of Chicago, Chicago, Ill., "The Organization and Administration of Physical Training;" WJ McGee, Anthropologist, "The Influence of Play in Racial Development with Special Reference to Muscular Movement;" G. E. Johnson, A. B., supt. schools, Lowell, Mass., "Play in Relation to Education;" Luther Halsey Gulick, M. D., chairman Physical Training Committee, Brooklyn, N. Y., "Athletics and Social Evolution" and "The Place of the Social and Aesthetic Elements in Physical Training as Exemplified by German Gymnastics."

Physical Culture Conventions:

A number of important conventions and conferences were held at the Physical Culture building during the Olympic season as follows: American Physical Education Association; Public Schools Physical Training Society; Physical Directors Society of the Young Men's Christian Associations of North America; Physical Training Section of the National Educational Association. In connection with the convention or the Physical Training Section of the National Educational Association a program of class work was arranged and carried out for the edification of that and other bodies showing the extent of the work in the public school systems and the training of children by the various turnvereins. A number of most interesting and pertinent addresses were delivered at this convention.

From the extensive and representative array of exhibits presented by the department of Physical Culture it was possible for the first time, perhaps, to get a comprehensive idea of the widespread extent, particularly in this country, of the Physical Culture movement; of the development it is reaching in all environments and under widely varying auspices; of the great increase in its scope and improvement, of its position in relation to other subjects in the curriculum; of the immense sums of money invested in fields, buildings and equipment; of the hundreds of teachers and thousands of pupils engaged in the work. The exhibition served preeminently as an educational factor of value not only to the student of Physical Culture, but also to the exhibitor who thus consciously took an account of stock of his own work; it has also effectively paved the way for future exhibits of greater extent and value, for by its success it has demonstrated the soundness of the judgment that established Physical Culture as a separate department in exposition classification.

CHAPTER XVII

THE CONGRESSES

Plan of Organization—Provision for Conventions—World's Press Parliament—Nearly Two Hundred Important Assemblages—National Democratic Convention—International Congress of Arts and Science—The Exposition's Valuable Contribution to Unity of Knowledge—Eight Volumes of Proceedings

THE crowning feature of the Exposition from the standpoint of contribution to the progress of the world was the series of international congresses leading up to and dominated by the Congress of Arts and Science.

Director of Exhibits Skiff designated these congresses as "an academic accompaniment of the Exposition." in outlining their purpose he wrote: "While the exhibits of material things will establish the condition of our productiveness, these congresses will traverse the intellectual courses through which this yield has come, and from these reflections point the way to achievement yet to be recorded."

The subject of the organization of the international congresses was given the serious attention which their importance demanded. In addition to the Exposition Committee on International Congresses, which consisted of F. W. Lehmann, chairman; Charles W. Knapp, Breckinridge Jones, John Schroers and A. L. Shapleigh, a distinguished administrative board, to supervise the organization of the congresses was appointed with membership as follows: Nicholas Murray Butler, president of Columbia University, chairman; William R. Harper, president of the University of Chicago; Frederick W. Holls, New York; R. H. Jesse, president of the University of Missouri; Henry R. Pritchett, president of the Massachusetts institute of Technology; Herbert W. Putnam, librarian of Congress, and Frederick J. V. Skiff, director of the Field Museum and director of exhibits of the Exposition. Howard J. Rogers, who was made director of the department of Congresses, was placed in charge of the details attending the organization, accommodation and conventions of the congresses. According to the general plan as decided upon by the administrative board, the congresses were to include three divisions:

The Three Divisions:

1. A special, representative congress organized and conducted by the Exposition Company under the direction of the administrative board - the Congress of Arts and Science.
2. A series of classified independent congresses of serious or direct scientific import promoted by the department of Congresses and by authorized societies

or organizations working in conjunction with that department.

3. Miscellaneous conventions or meetings of associations, state, national or social, encouraged by the department of Congresses to assemble in St. Louis during the summer of 1904, where they might join in the festival and educational movement of the Exposition.

The convocation at St. Louis and upon the exposition grounds of such representative and distinguished assemblies and the discussion by these tribunals of topics of interest to the welfare of humanity and society would, it was believed, make the year 1904 an epoch and the City of St. Louis and the Exposition distinctive agencies of progress. The proposition of the Exposition Company in relation to the international Congress of Arts and Science included the provision of funds sufficient to secure the participation of the leading scientists of the world. For the second division or series of congresses the Exposition agreed to furnish meeting places and assumed certain expenses. For the third series of congresses or conventions the Exposition furnished meeting places but undertook no responsibilities in relation to other expenses, programs or discussion.

It was the good fortune of the Exposition to have at its disposal a number of halls and assembly rooms for meetings far beyond the resources of any other exposition. This was partly due to the fact that the Exposition occupied the eight permanent stone buildings belonging to Washington University in which were many lecture halls available for congress purposes. The structure in which the office of the director of congresses was located was the Hall of Congresses which is now the library of the University. In addition to the rooms afforded by the University buildings there were many halls available in the exhibit palaces and other exposition buildings scattered over the grounds and in the hotels adjacent to the grounds. For conventions which desired to meet in the business portion of the city there was available the coliseum building occupying the block between 13th and 14th streets on Olive Street. This building had been rented by the Exposition Company for the period of the Exposition. With these accommodations it was possible to hold at one time twenty-nine conventions and congresses varying in attendance from one hundred to ten thousand.

Miscellaneous Congresses:

Of the miscellaneous congresses one hundred and fifty-six were held during the Exposition representing almost every kind of social, intellectual and industrial activity and embracing an aggregate attendance of considerably more than 100,000 delegates. Included in this series was the National Democratic Convention, National Editorial Association, National Federation of Women's Clubs, American Publishers' Association, World's Press Parliament, National Association of Postmasters, international Association of Machinists, National Congress of Mothers, National Skat Convention, National Federation of Musical Clubs, international Association of Chiefs of Police, American Waterworks Association, National Coopers' Association, American Foundrymen's Association, American Civic Association, National Municipal improvement League, National Congress Sons of American Revolution, National Gas Congress, Railway Clerks of America, Train Dispatchers' Association, inter-Collegiate Oratorical Contest, Association of State Universities, National Society of the Scientific Study of Education, The World's Unity League, National Amateur Journalists, American Osteopathic Associations, Single Tax League, Ancient Order of Hibernians, National Con-

vention or instructors for the Blind, Master Butchers' Association of America, National American Curfew Association, Southwestern Rowing Association, Bohemian Slavonian Benevolent Association, International Apple Shippers' Association, International Typographical Union, Catholic Total Abstinence Union, Society of American Florists, American Veterinary Medical Association, National Shorthand Reporters' Association, National Firemen's Association, American institute of Bank Clerks, Order of Eagles, International Dental Federation, National Afro-American Council, Modern Woodmen of America, German Roman Catholic Verein, Catholic Knights of America, inter parliamentary Conference, American Mathematical Society, Spanish-American War Veterans, Daughters of the Confederacy, Daughters of the American Revolution, American Christian Missionary Societies, Farmers' institute, National Nut Growers' Association, Interstate Commerce Law Convention.

All of these conventions were notable. Among those which attracted popular interest in a special degree in addition to the National Democratic Convention were the World's Press Parliament, the National Editorial Association and the Interparliamentary (Peace) Conference. Conveniences were provided and attentions were shown the delegates of these as well as of all of the conventions and congresses. In some cases, including the Press Parliament and the Interparliamentary Conference, also the great International Congress of Arts and Science, special entertainment was arranged. The concluding banquets given these bodies, with addresses by distinguished delegates and individuals, were notable events of the Exposition.

Classified Congresses:

Of the second series of special congresses fourteen were held during the Exposition, with a total official attendance of over 20,000. All of these congresses were of first importance in personnel and subjects considered and their deliberations and conclusions represented an added asset in the world's volume of practical experience and serviceable knowledge. Included in this series of congresses were the international Good Roads Congress, Indian Education Congress, international Congress of Education, Fourth International Dental Congress, Fifth international Electrical Congress, International Pure Food Congress, Universal Congress of Lawyers and Jurists, International Engineering Congress, International Aeronautical Congress, American Congress on Tuberculosis, International Congress of Military Surgeons, International Sunday Rest Congress, International Library Conference, International Congress of Heads of Schools for the Deaf.

Congress of Arts and Science:

The participating attendance in the international Congress of Arts and Science was in the neighborhood of ten thousand. This number included distinguished delegates from every leading nation of the world. The congress was opened with fitting ceremony and dignity in Festival Hall on September 19th. Its deliberations extended over a period of one week; the meetings of its numerous co-related bodies requiring all of the twenty-nine halls and assembly rooms available by the department of Congresses. Of the personnel and character of

the international Congress of Arts and Science Director of Exhibits Skiff wrote:

The international Congress of Arts and Science was formally and impressively opened in Festival Hall. This memorable occasion, really one of the most distinguished and significant in history, witnessed the assemblage in formal conference of representative scientists and leaders in intellectual and artistic activity from every section of the earth. Upon that day and those which immediately followed during the convention of this extraordinary congress, papers were read by men whose names have been made illustrious by the highest performances in science and art - who stand at the front of the civilization of the world.

The record of the organization and deliberations of this congress is set forth in the report of Director of Congresses Rogers :

The International Congress of Arts and Science was an evolution of slow growth from many conferences by men of many occupations. As finally worked out it bore little resemblance to the original plans and discussions. The germ of the idea might fairly be said to have been contained in Director of Exhibits Skiff's recommendation to the Executive Committee of the Exposition that the congress work stand for something more than an unrelated series of independent gatherings and that some plan be authorized which would at once be distinctive and of real scientific worth. In support of this view the Executive Committee agreed to expend \$200,000 to insure the project. Many plans were brought forward; but one which seemed to belong of right to the late Frederick W. Holls of New York City contained perhaps the next recognizable step in advance. This thought was briefly that a series of lectures on scientific and literary topics by men prominent in their respective fields be delivered at the Exposition and that the Exposition pay the speakers for their services. This point was thoroughly discussed by Mr. Holls and Professor Nicholas Murray Butler. The next step in the evolution of the congress was the idea of bringing these lecturers together at the Exposition at about the same time or all during one month. At this stage of the development Professor Hugo Munsterberg of Harvard University who was the guest of Mr. Holls and an invited participant in the conference made the important suggestion that such a series of unrelated lectures even though given by most eminent men would have little or no scientific value, but that if some relation of underlying thought could be introduced in the addresses then the best of work could be done - which would be of real value to the scientific world. He further said that scientific leaders would be likely to favor the plan not so much as a result of the honorarium to be given for their service as because of the valuable opportunity afforded of developing such an important contribution to scientific thought. Subsequently Professor Munsterberg was asked by Mr. Holls to formulate his ideas in a manner to be submitted to the exposition authorities. This was done in a communication under date of October 20th, 1902, which contained, logically presented, the foundation of the plan afterwards worked out.

At this juncture the department of Congresses was organized, the administrative board was appointed, and the director named. On December 27th, 1902, the first meeting of the administrative board took place in New York City. At this meeting the following general plan was adopted: First, that the sessions of the congress be held within a period of four weeks beginning September 15th, 1904. Second, that various groups of foreigners be asked to discuss their special sciences with reference to some theme of universal human interest in order that certain unity and interest of action might be had.

The Plan of Organization:

Many other additions were made to the plan, notably that the theme to be discussed be, "The Progress of Man Since the Louisiana Purchase;" that the participants of the congress be confined to men of thought and action whose work fell under the general heads

of natural science, historical, sociological and economic science, philosophy and religion, medicine and surgery, law, politics and government, and applied sciences.

These conclusions were conveyed by Chairman Butler in a letter to a committee of seven men specially eminent in their professions, and termed the committee on plan and scope, for consideration. These men were: Simon Newcomb, chairman, Washington, D. C., retired professor of mathematics, U. S. Navy; George F. Moore, D. D., Cambridge, Mass., Professor of theology, Harvard University; John Bassett Moore, LL. D., New York, professor of international law and diplomacy, Columbia University; Hugo Munsterberg, Ph. D., Cambridge, MA., Professor of psychology, Harvard University; Albion W. Small, Ph. D., Chicago, Ill., Professor of sociology, University of Chicago; Elihu Thompson, Lynn, Mass., general consulting engineer of the General Electric Company; William H. Welch, M. D., LL. D., Baltimore, Md. professor of pathology, Johns Hopkins University.

This advisory committee met on January 10th, 1903, for a preliminary discussion and on January 17th for the final meeting, and adopted the general plan presented by Professor Munsterberg. This was recommended to the administrative board which held a meeting the next day. Professor Newcomb and Professor Munsterberg met with the board for consultation, at which time the first draft of the program of the congress was made. As a result of the deliberations the president of the administrative board sent this communication to the director of Congresses who presented it to the Executive Committee of the Exposition:

The administrative board has the honor to make the following recommendations in reference to the department of Congresses:

1. That there be held in connection with the Universal Exposition of St. Louis in 1904, an International Congress of Arts and Science.

2. That the plan (copy attached) recommended by the administrative board for the general Congress of Arts and Science to be held during the six days beginning on Monday, September 19th, 1904, be approved and adopted subject to such revision in point of detail as may be advisable, preserving its fundamental principles.

3. That Simon Newcomb, LL. D., of Washington, D. C., be named for president of the International Congress of Arts and Science, provided for in the foregoing resolution.

4. That the Directors of the Exposition be requested to change the name of this board to the "administrative board of the International Congress of Arts and Science."

5. That Professor Munsterberg of Harvard University and Professor Albion W. Small of the University of Chicago be invited to act as vice-presidents of the congress.

6. That the detailed arrangement for the congress be entrusted to a committee consisting of the president and two vice-presidents already named, subject to the general oversight and control of the administrative board, and that the Directors of the Exposition be requested to make appropriate provision for their compensation and necessary expenses.

7. That it be recommended to the Directors of the Exposition that appropriate provision should be made in the office of the department of Congresses for an executive secretary and such clerical assistance as may be needed.

8. That the following payments be recommended to those scholars who accept the invitations to participate and do a specified piece of work submit a specified contribution in the International Congress of Arts and Science; for traveling expenses of an American scholar \$150.00; for traveling expenses of a foreign scholar \$500.00.

9. That provision be made for the publication of the proceedings of the congress in suitable form to constitute a permanent memorial of the work of the Exposition for the promotion of science and art.

10. That an appropriation of \$200,000 be made to cover expenses of the department of Congresses, of which sum \$130,000 be specifically appropriated for the International Congress of Arts and Science and the remainder to cover all expenses connected with the publication of proceedings of said International Congress of Arts and Science, and the expenses for promotion of all other congresses.

These resolutions were voted in substance by the Executive Committee of the Exposition, approved by the President and from that time the congress may be said to have been inaugurated.

Results of Exploitation:

Subsequent meetings of the administrative board and the organizing committee were held in New York on February 23rd and again in May 1903; and a meeting of the administrative board was held at St. Louis April 30th, but all were for the revision and adaptation of the program, the selection of speakers and chairman and the consideration of the various

details which surrounded the inception of this tremendous enterprise. By the last of May, the lists of foreign invitations were ready to be delivered and having been given the strongest credentials from the Exposition and from the President of the United States, the organizing committee proceeded to Europe, Dr. Newcomb in May, and Professors Munsterberg and Small in June. In the division of territory Dr. Newcomb was assigned to France, Professor Munsterberg to Germany and Switzerland, and Professor Small to England, Austria, Italy and Russia. These boundaries were not necessarily strictly observed but in the main were followed. Two conferences were held while abroad and by the 1st of September each of the one hundred and twenty-eight sections of the congress had been brought to the personal attention of the selected European savants. The reception of the organizing committee was most flattering but it was only by dint of great perseverance and personal influence that the scholarly world of Europe was brought to a full realization of the possibilities of the plan of the congress and what it meant to the scientific world. Great obligations to the department of state at Washington must be acknowledged for its many courtesies and invaluable aid in this connection.

The plan of the congress as now developed and published was as follows: The idea of the congress grew out of the thought that the sub-division and multiplication of specialties in science had reached a stage at which investigators and scholars might derive inspiration and profit from a general survey of the various fields of learning, planned with a view of bringing the scattered sciences into closer mutual relations. The central purpose was the unification of knowledge, an effort toward which seemed appropriate on an occasion when the nations were bringing together an exhibit of their arts and industries. An assemblage was therefore to be convened at which leading representatives of theoretical and applied sciences should set forth those general principles and fundamental conceptions which connect groups of sciences, review the historical development of special sciences, show their mutual relations and discuss their present problems. The speakers treating the various themes were to be selected in advance from the European and American continents.

In September 1903, the organizing committee returned with one hundred and seventeen acceptances to the one hundred and twenty-eight sections and among them some of the most famous names in European science. During the fall and winter several joint meetings of the administrative board and organizing committee were held for the following purposes: to select American speakers for the divisional, departmental and sectional addresses; to arouse and maintain interest in the scientific societies of the country for the support of the congress; to continually fill the places of those who for many reasons found it impossible to keep their engagements; to plan in detail for the accommodation and successful conduct of the congress. It must not be supposed that the personnel of the program was selected arbitrarily by the board and committee. On the contrary every name chosen was the result not only of careful deliberation on their part but also of the recommendations of the scientific societies and individual authorities whose advice was asked.

As the spring of 1904 approached the details of the congress fell heavily on the director of Congresses and the members of the organizing committee and seemed to accumulate as September approached. The correspondence with the 310 principal speakers of the congress over the correct phases of their addresses, their accommodations and reception in St. Louis, and the machinery of conducting simultaneously sixteen sections with two sessions a day, with the proper attention also to the press and the great body of the interested public gave little time for other matters.

In the late spring of 1904 all matters of policy having been settled, the administrative board made the organizing committee a committee with power on all matters concerning the revision of the program and the filling of vacancies in the lists of speakers. To the director of Congresses fell the decision and execution of all matters connected with the care of the congress and the Exposition's relation thereto.

For the accommodation of the foreign representatives the Washington University dormitory with its ninety-four rooms had been set aside. For those accompanied by their wives

or daughters entertainment was found in the hospitable homes of St. Louis. In this manner twenty-nine were cared for while sixty-four occupied the dormitories. To the latter the Exposition served breakfasts in their rooms. The American speakers were of course expected to make their own arrangements and provide for their own comfort although the rooming and intelligence bureaus of the Exposition were at their service.

The department was fortunate enough to secure for the month of September the services of Dr. L. O. Howard of Washington, D.C., as secretary of the congress. In the division of work Dr. Howard took the printing and distribution of the programs, the assignment of dormitory rooms, assignment of meetings to their respective halls and the registration work of the congress. His great experience in these matters and wide acquaintanceship with the scientists rendered him an invaluable aid.

Proceedings and Results:

The congress was held during the week of September 19th-25th and opened Monday at 3 P.M. with impressive ceremonies in Festival Hall. It was opened by the director of Congresses and welcomed by President Francis. Director Skiff then set forth the purpose and aim of the congress and its relations to the energies of mankind as portrayed in the great exhibit palaces. Doctor Harper gave a resume of the development of the congress after which the vice-presidents responded for their respective countries. Dr. Newcomb then gave the initial address of the congress.

The discussions were arranged on the following plan: After the opening of the congress on Monday afternoon there followed on Tuesday forenoon addresses on main divisions of science and its applications, the general theme being the unification of each of the fields treated. These were followed by two addresses on each of the twenty four great departments of knowledge. The theme of one address in each case was the fundamental conceptions and methods while the other set forth the progress during the last century. These addresses were delivered by Americans making the work of the first two days the contribution of American scholars.

On the third day with the opening of the sections the international work began. One hundred and twenty-eight sectional meetings were held on the four remaining days of the congress at each of which two papers were read, the theme of one being suggested by the relations of the special branch treated to other branches; the other by its present problems. Three hours were devoted to each sectional meeting thus enabling each hearer to attend eight such meetings if he so desired. The program was so arranged that related subjects were treated as far as possible at different times. The length of the principal addresses being limited to forty-five minutes each there remained at least one hour for five or six brief communications in each section. The addresses in each department were carefully collected for later publication.

Throughout the week the program ran smoothly and the halls were crowded with persons anxious to see and hear the acknowledged leaders of thought throughout the world. An examination of the published papers will demonstrate the character and success of the undertaking. It was admitted that at no previous time had any gathering approached this congress in bringing to one place so many leaders in so many varied lines of science, literature and art. The excellence of the papers submitted and the brilliance of the discussions were natural accompaniments of such an assemblage. It is hoped that the influence of this meeting will be even more important than the formal addressee with those in sympathy with the efforts to bring unity into the world of knowledge.

After the close of the congress the Committee on Congresses recommended that the Exposition express to the administrative board and the organizing committee the appreciation of the services rendered and the acknowledgment of the success of the congress; this was done. It was also recommended that the proceedings of the congress be published and that the director of Congresses, Howard J. Rogers, be appointed editor of the publication.

Both of these resolutions were passed by the Executive Committee and approved by the President of the Exposition. The proceedings were published in eight royal octavo volumes of from 550 to 800 pages each.

Program of Congress Week:

The participants in the Congress were the guests of the Exposition and were fittingly entertained. The social events arranged in their honor were numerous and varied, as the program of these entertainments and diversions shows:

Monday evening, September 19th-Grand fete night in honor of the Congress of Arts and Science. Special illuminations and lagoon fete. Banquet by the St. Louis Chemical Society, at the Southern hotel, to the members of the chemical sections.

Tuesday evening, September 20th - General reception by the Board of Lady Managers to the officers and speakers of the congress.

Wednesday afternoon, September 21st - Garden fete given to the members of the congress, at the French pavilion, by the commissioner-general of France.

Wednesday evening - General reception by the German imperial commissioner-general to the officers and speakers of the congress at the German State House.

Thursday evening, September 22nd-Shaw banquet at the Buckingham Club to the foreign delegates.

Friday evening, September 23rd-General banquet to the speakers and officials of the congress in the banquet hall of the Tyrolean Alps.

Saturday evening, September 24th-Banquet at the St. Louis Club given by the Round Table Club of St. Louis. Banquet given by the commissioner general from Japan. Dinner given by the commissioner-general from Great Britain.

The reception of Commissioner-General Lewald at the German pavilion was a brilliant and dignified function worthy of the participation which Germany took in the congress. The garden fete at the French pavilion was also a beautiful and graceful function tendered by Commissioner-General Gerald. The closing banquet was given in the banquet hall of the Tyrolean Alps. Six hundred members of the congress were assembled. The music of the Exposition orchestra, the good fellowship of the members, and the responses of the speakers introduced by the President of the Exposition rendered the occasion memorable. The speakers were Sir. James Bryce for England, Professor Darboux for France, Commissioner-General Lewald for Germany, Professor Hozumi for Japan, Signor Brunialti for Italy and Frederick W. Lehmann for the Exposition.

The members of the congress visited various portions of the country before returning to their homes. Many visited Washington where they were received by the President and entertained by Dr. Newcomb. They visited Columbia, Yale and Harvard Universities; at the latter they were given a final reception by Professor Munsterberg.

Of each of the congresses much has been written and much has been said in compliment, congratulation and auspicious prediction. The accomplishment recorded and the material aid and renewed impetus given to progress are gratifying indeed. Interpreting results, the following paragraphs are from the report of Director of Exhibits Skiff:

If it were deemed necessary to record the most valuable and lasting contribution made by the Exposition to the welfare and progress of the world, the Congress of Arts and Science would, it is believed, have to be mentioned first in this connection. The organization and convention of this incomparable congress was no doubt among the most significant performances of modern times. The Exposition of 1904 was a brilliant success in every respect; that fact is assured and recorded. But as time passes on and the splendid reflections of the Exposition's achievements are cast further and further into the future, the projection of the pure white light of these congresses will ever stand out upon the firmament of civilization as the most brilliant of all and steadily growing more brilliant—a rich light of great performance which will flash forth strong, long after the other glories of the Exposition have been dimmed and forgotten. And its rays will fall with ever softening and satisfying glow upon the generous and discerning body of men and the energetic community whose action made the congresses possible.

The great journals of the world have congratulated the Exposition and the City of St. Louis upon the international congresses. The latter have been referred to as a new epoch in the intellectual performance of the world, a clearing house of the wisdom of all time, a fitting and distinguished adjunct, indeed, of a twentieth century exposition of the world's progress. The papers of these congresses which in published form will find their way into the libraries of the world and be treasured there with increasing care will constitute a monument that will forever stand to mark the performance and glory of this Exposition.

It is a worthy and stimulating reflection to consider that the great new region of the Louisiana Purchase, led by its natural capital, St. Louis, has written its record of performance so early and so indelibly upon the pages of the history of nations and of mankind.

CHAPTER XVIII

THE AWARDS

Organization of Juries—Principle of International Responsibility—Group, Department and Superior Jurors—The Medals—The Diplomas—Exposition Theory and Practice Upheld by Court satisfaction of Exhibitors

ONE of the most important bodies which assembled at the Exposition was the international jury of awards. A universal exposition has two motives—first, the extension throughout the world of newly discovered facts of significance and importance to industrial and scientific progress and social welfare; second, the competition of the workers of the world to demonstrate their respective superiority in all of those activities which make for the advancement of civilization as indicated by exhibits. The duty of ascertaining and indicating which are superior exhibits develops into a serious task. A jury whose function it is to pass upon achievements in industrial and social activity and decree an award of excellence has a delicate obligation and a great responsibility to discharge. The high character and independence of action of such a jury is essential. The selection of the members, the definition of the functions, the facilitation of the procedure constitute a task of far-reaching importance. To compose the jury, representative men, specialists and experts direct leaders in all lines of progress must be selected and organized into classified working sections.

The execution of this undertaking was carried out with deliberation. Director of Exhibits Skiff under whose official supervision the jury of the Universal Exposition of 1904 was organized was well fitted for this task. His connection with the organization and operation of the international juries at the Paris and Chicago expositions gave him experience that proved of great value in the work at St. Louis.

The Jury independent:

In the first place it was understood that the international jury of awards must be absolutely independent of the exposition management - a body responsible to no one but the public; second, the character and method of examination of the exhibits of the Exposition must be effective and exhaustive. The rules governing the organization and conduct of the jury provided for these conditions. The principal details of these rules are set forth in the report of Director of Exhibits Skiff:

Possibly no part of the work of the Division of Exhibits was of more serious importance or presented more exacting requirements than the preparation necessary for the organization and operations of the jury of awards. Early in the work of the Division of Exhibits

special rules governing awards and the organization and functions of the international jury of awards were prepared and promulgated. Later, in May 1904, in response to the unanimous request of the foreign commissioners-general, a revised edition of these rules was authorized and issued. This revised edition differed from the original in so far as to permit the organization of the international jury in September 1904, instead of in June 1904, and condensed the work of the jury by limiting the time of the sessions of its various bodies. Both editions of these rules received the approval of the Exposition Company and also the approval of the Louisiana Purchase Exposition Commission after certain changes recommended by the latter body had been incorporated in each.

The extent of the membership of the international jury was based as accurately as practicable upon the number and importance of the exhibits presented at the Exposition. This principle of selection applied to the total number of jurors, the number of jurors chosen to represent each country participating in the Exposition as well as the number of jurors selected to judge the exhibits in each exhibit department and group.

Of the body of international jurors thus established three graded succeeding juries were constituted; one, the primary and general organization of group juries; second, the department juries; third, a superior jury.

The members of the primary or general jury from the United States were nominated by the chiefs of the respective exhibit departments upon conclusive endorsements as to fitness; the members of this jury representing foreign countries were nominated by the commissioners of those countries under the same demands for efficiency. It was required that all nominations for membership be submitted to the Louisiana Purchase Exposition Commission for approval before formal appointment of the same was made by the President of the Exposition Company; and this except in a limited number of cases-the result of oversight-was done. In every case the selection of jurors was attended with the utmost care.

Membership of the Jury:

The complete membership of the primary jury as organized, allowing full complement for the consideration of each class of exhibits, was 1839, of which over 700 were representative of the foreign participation. Natural combinations effected where such practice was desirable for efficiency made the number of actual jurors employed considerably less than this total. In addition to the regular body were 127 alternates. This general jury was divided into one hundred and forty-four sections corresponding to the one hundred and forty-four separate groups of exhibits provided in the exposition classification; this division constituted one hundred and forty-four individual group juries. These group juries convened on September 1st, 1904. All promptly effected organization, elected officers, including a chairman and vice-chairman, and proceeded to the work of inspecting exhibits. Their operations continued as long as found necessary up to September 30th when all group juries adjourned after having made report of their conclusions and recommendations to the respective department juries.

The department juries which succeeded the group juries were composed principally of chairmen and vice-chairmen of the group juries; they convened on September 21st. They effected organization and elected officers including chairmen and vice-chairmen and reviewed the operations and conclusions of the group juries adjourning and reporting their own findings to the superior jury by October 1st.

The superior jury convened on October 1st and remained in session until October 15th. Its membership consisted of the chairmen and vice-chairmen of the department juries, the chiefs of the exhibit departments. The commissioners-general of the principal exhibiting foreign countries, the director of exhibits, the President of the Exposition Company, and a representative, each, of the Louisiana Purchase Exposition Commission and the Board of Lady Managers. The President of the Exposition Company was president of this

final jury; the director of exhibits, 1st vice-president; a representative of the National Commission, 2d vice-president (these officers named by regulation); the commissioner-general of France, 3d vice-president, and the commissioner-general of Germany, 4th vice-president (by election).

The duty of the superior jury was to review the findings of the previous lower juries, consider recommendations and appeals and to determine finally and fully the awards to be made to exhibitors. At the close of the deliberations of the jury as a whole, after its final session on October 15th, its work was formally referred to and continued by a committee consisting of its president and four vice-presidents, as provided for in the rules governing awards.

The relationship of the Division of Exhibits to the actual functions of making awards was purely co-operative and advisory. Under the rules governing the organization of the international jury, the director of exhibits and the chiefs of departments had no voice in the findings of the group juries and the succeeding department juries. Each chief, under the rules, was made a member of the final or superior jury, and by the same authority the director of the Division of Exhibits was made first vice-president of that body. The functions of these officials in this specific capacity, however, were entirely apart from their administrative duties in connection with the Division of Exhibits. Every possible aid was given to each section of the jury by all officers of the division in ascertaining the facts in relation to exhibits but always with the understanding as provided in the rules that the jury was a separate and independent body acting and deciding upon all questions upon its own responsibility and initiative.

Verdicts Universally Satisfactory:

From the above may be gathered an idea of the organization of the jury, the sincerity and thoroughness of the procedure and the independent character of the operations and conclusions. The satisfactory character of the work is attested by the general approval with which the final verdicts have been received by exhibitors, as appears from the report of the secretary of awards, John H. McGibbons:

So far as can be determined all the exhibitors except five were satisfied with the awards they received. This is almost incredible in view of the great number of exhibitors and the commercial or educational rivalry among them. It evidences an equitable adjudication of exhibits by eminently qualified jurors. Of the five exceptions four were exhibitors of products which they believed or boldly asserted should have received grand prize awards. The fifth exhibitor received a grand prize but protested because the jury also granted a grand prize to a competitor.

The foreign commissioners-general were unanimous in their approval of the jury work and in their expressions of satisfaction with the awards, the following extract from the final report of the commissioner-general of Great Britain affording a characteristic illustration:

In conclusion it may be remarked that the whole of the Jury work proceeded smoothly, and not only did the British Jurors express satisfaction with the impartiality of their foreign colleagues in the recommendations for awards but the exhibitors themselves and their representatives appear to have been fully satisfied.

That this general approval of the work of the international jury was based upon a thoroughly capable and equitable adjudication of exhibits was indicated by the action of the courts, which in the case of the one disputed and contested award, upheld the jury's action in every detail.

A misunderstanding by the Louisiana Purchase Exposition Commission of its own prerogative and of the independent nature of the international jury reflects no criticism upon the character or operations of the jury. The international jury was selected and or-

ganized, and its proceedings carried on in every essential detail according to the rules of award formally approved by authorized officers of the Exposition and by the Louisiana Purchase Exposition Commission. The jury was an international and an executive body of experts selected to pass upon an international collection of exhibits. To submit for approval or amendment either to the National Commission or to the Exposition Company the awards made by this international body would have been wholly inconsistent with exposition law and practice. Such course would have been in violation of the rules of award formally promulgated by the Exposition with the approval of the National Commission. It would have been met with serious and spirited protests from the representatives of foreign governments which had accepted the rules as a contract governing both the Exposition and the exhibitors. The position of the National Commission that the awards be subject to review by that body was untenable.

Medals and Diplomas:

The emblems adopted for the awards were a graded series or medals of four varieties and degrees of value: grand prize, gold medal, silver medal, bronze medal. Each medal was accompanied by a diploma or certificate representing the formal decree of award and bearing the name of the recipient exhibitor, a description of the exhibit upon which award was made and the signatures of the proper officers of the Exposition Company. It was important that these permanent and widely distributed evidences of the Exposition and its performance be of fitting character and artistic form and detail. To this end committees of well-known artists were appointed early in the exposition work to select experts to make designs for the medals and diplomas of award; also to pass upon such designs, as well as to approve the final execution of the medals and diplomas by the engravers and printers. This work was successfully accomplished. The diplomas and medals were produced upon the lines of the highest art, being pronounced by authoritative critics to be the finest specimens of their class so far created and executed.

A little more than a year after the close of the Exposition the distribution of the diplomas and medals of award to all parts of the world was completed - a record in consonance with the other performance of the Exposition and unprecedented. The evidences of appreciation received from exhibitors in the United States and other countries in the form of letters commending the excellence and beauty of the diplomas and medals made a gratifying record which has been preserved in the exposition files. Particular satisfaction was expressed over the manner in which the names of exhibitors and the descriptions of exhibits were inserted, a result altogether without previous example.

The Designs:

The design of the diploma, 16x18 inches in size, was prepared by Will B. Low and reproduced by Gilbo and Company in sepia tint upon imperial Japanese paper 21x24 inches. The following brief description of the detail and symbol of this design was submitted by Mr. Low:

The central figure of the composition, a robust clear-eyed maiden in her first youth, Columbia, looks forward with unclouded brow intent upon a future beyond the act which she represents, placing one hand in sign or possession upon the globe, typifying the territorial acquisition which is offered by her sister France seated at her right. Simultaneously from her other hand she passes on the torch or progress to her messenger (the youth of her

country) who with winged feet stands ready to depart on his mission of civilization towards the western sun which irradiates the sky. Columbia is draped with the flag chosen as the symbol above all others which is recognized to the farthest limits of the world and denotes the country where was the Exposition that issued the diploma. France, wearing the costume of the period of the cession of the Louisiana Territory, is by a voluntary anachronism depicted with the imperial crown, for while the act of cession was accomplished in the interim of the Consulate, it was a step in the progress of Napoleon, and imperial France remains in our memories today as relinquishing the territory which our younger nation has so notably developed. The border of a classic-empire design encloses the names of the states of the Union, prominence being given to those comprising the territorial acquisition, while the fourteen stars in the tablet below still further emphasize their importance.

The medal was designed by Adolph A. Weinman. The dies were engraved, and the medals struck by the United States government mint at Philadelphia. The average weight of the various forms of the medal is about three and one-half ounces. The alloy for the medals was made especially for the Exposition after samples were submitted and passed upon by expert medalists. Mr. Weinman submits the following brief description of the medal:

In the composition of the obverse of the medal are shown two figures one of which, Columbia, tall and stately, is about to envelop the youthful maiden by her side, typifying the Louisiana Territory, in the flag of the stars and stripes, thus receiving her into the sisterhood of the states. The other figure is depicted in the act of divesting herself of the cloak of France symbolized in the emblem of Napoleon, the busy bee, embroidered thereon. In the background is shown the rising sun, the dawn of a new era of progress to the nation.

The reverse of the medal shows an architectural tablet bearing an inscription indicating the grade of the medal. Below the tablet are two dolphins symbolizing our eastern and western boundaries, the whole surmounted by an American eagle spreading his wings from ocean to ocean.

For the grand prize medal the original design is set in a shield, in the upper field of which are fourteen stars representing the Louisiana Purchase states and territories, and in the lower field thirteen bars representing the original states. In the gold medal the original design appears upon a three-pointed shield of curving segments, the field or margin outside the medal circle at each point containing a wreath encircling a monogram or emblem - U.S.-J. N. - and a fleur-de-lis; each of the wreaths being surrounded by fourteen stars representing the Louisiana Purchase states and territories. For the silver medal the design is set upon a cross of the order of Saint Louis which in turn rests upon a square shield background. For the bronze medal the original design without addition or variation is employed.

Total Number of Awards:

Of these medals of award 33,158 were executed and issued, of which number something less than half went to foreign countries. The number of diplomas of award executed and issued was considerably greater reaching the total of 41,052; the excess being due to the issuing of duplicate diplomas to participants in collective exhibits for each of which only one award or medal was authorized. A great number of diplomas, about 3,000, were issued to exhibitors of livestock who received award and to whom cash prizes were given instead of medals.

In addition to the formal medal and diploma of award a commemorative medal and diploma were authorized to be conferred upon those who had rendered distinguished aid or service to the Exposition. These medals and diplomas

did not represent awards of the international jury but were bestowed directly by the exposition management as its official and voluntary act and as a public token of material appreciation. In design the commemorative diploma is an exact duplicate of the diploma of award except for the inscription, which indicates its special character. The commemorative medal is an adaptation of the form of the gold medal of award by Weinman, in exact size. Of commemorative diplomas and medals 6,000 were issued; which made the total of all medals awarded 39,158, and of diplomas conferred 47,052.

In view of the fact that it would require a number of months to prepare and issue the official diplomas and medals of award, and in response to urgent demands upon the part of exhibitors anxious to at once secure and display formal evidences of awards, received by them, the exposition management authorized the creation and distribution under strict regulation of an official award ribbon. The privilege of preparing this ribbon and furnishing it to exhibitors was extended, under carefully worded contract rigidly governing the right and operation of the concession, to a private company which proceeded to carry out the intention of the management with apparent fidelity and success. The result, however, was not satisfactory. Notwithstanding the precautions of the contract mistakes developed and became so annoying that the concession was revoked by the exposition management.

CHAPTER XIX

UNITED STATES GOVERNMENT EXHIBIT

**Great Guns—Section of a Battleship—One Day's Programme—
The Board—The Main Building—Postal Progress in Ten Years—All
Previous Exposition Efforts Surpassed—What the Government
Does for the People**

THE United States Government appropriated funds for a greater display and for more extensive participation than had been made by federal authorities at any preceding exposition, domestic or foreign.

One justification for an exposition and its attendant expenditures is the measure of progress it establishes from the preceding milestone. Since 1893 the United States has moved up to a new relative position among the nations of the earth in naval strength. Of the \$1,473,000 expended under direct supervision of government officials on the exhibits of the government at the St. Louis Fair, no part was better employed than that which illustrated the growth of the American navy. It was necessary only to recall the exhibit of 1893 to realize the marvelous progress made within the decade. An elaborate illustration of seacoast defense was given. In 1893 hardly a beginning had been made in this direction. The war department exhibit showed a sixteen-inch coast defense gun recently erected at Sandy Hook, New York harbor. With a weight of 130 tons this gun throws a shell of 2,400 pounds a distance of twenty-one miles having a velocity at the muzzle of 23,000 feet a second. The world knows in a general way that the Spanish-American war prompted attention by the United States to seacoast defense and also to the manufacture of ordnance material. The world was hardly prepared for such evidences of this as the Exposition revealed. Mounted with all of the mechanism for actual use there were shown in their emplacements two disappearing guns. One of these guns cost \$43,451 and weighed 131,500 pounds; the carriage which elevated and depressed it weighed 411,826 pounds and cost \$41,000. The 1,000-pound shell loaded into this gun several times a day by the company of heavy artillery which went through the performance has an extreme range of eighteen miles.

Ten years ago, rural mail delivery was unknown in the United States and had no place in the elaborate display of the post office department at Chicago. It was illustrated at St. Louis by maps showing that it now extends in the thickly settled neighborhoods throughout the country, every state in the union having this service established. A pneumatic postal tube was one of the entirely new features of the post office exhibit.

Progress by the bureaus of scientific investigation in the department of agriculture was illustrated, showing how that department has within a few years

increased the value of American farm crops by over \$100,000,000 annually.

Perhaps nothing can give in succinct form a better idea of the comprehensive and elaborate character of the United States government display than the program of one day showing the activities in the various sections of this exhibit. The program taken at random and given herewith was one announced for Saturday, October 15th:

Government Exhibit, Morning Program:

9:00 a.m. Buildings open to 6:00 p.m.

9:30 - Submarine mines, war section, every hour.

10:00 - Biograph, navy department.

Feeding hour for seals, United States Fisheries.

10:30 - Biograph pictures (in motion)-Interior department - (1) Scenes from U.S. Indian school, Albuquerque, N. M.: Fire drill, parade of girls, parade of boys, carpentry class. (2) Katcina dance of Moki Indians at Walpi, Arizona: The entrance of the dancers, the antics of the clowns, the dance at its height. (3) Navajo Indian woman weaving a blanket.

Stereopticon slides of irrigation scenes. Illinois launched, model dry dock.

Field signal demonstrations, heliographs, outside war section.

11:00 - Biograph, navy department.

Wireless telegraphy.

11:30 - Radium demonstrations, interior department, John Crawford, Jr., Columbia University.

12:00 - Biograph, navy department.

Afternoon Program:

1:00 - Biograph pictures (in motion)-interior department - (1) Party of tourists descending Bright Angel Trail, Grand Canyon of Colorado. (2) Scenes from Yellowstone National Park: The arrival of a train, the arrival of the stages at Mammoth Springs hotel, Troop E, 3d U. S. cavalry, starting for a tour of the park; Steamer Zillah on Lake Yellowstone.

1:30 - Biograph, navy department.

2:00 - Biograph pictures (in motion)-interior department - (1) Sports among the Navajo Indians at Keams Canyone, Ariz.: Wrestling, tug-of-war, foot race, horse race. (2) Katcina dance of Moki Indians at Oraibi, Ariz. (3) Scenes on Crow Indian reservation, Montana: Raking hay, Crow Indian and bucking bronco, characteristic dance.

Colored stereopticon pictures of U. S. reservation at Hot Springs, Arkansas, with lecture by C. F. Cooley.

2:30 - Biograph, navy department.

Old Kearsarge in floating dry dock.

3:00 - War department - field signal demonstrations, heliographs, U. S. signal corps outside section.

Feeding hour for large birds, U. S. bird cage.

Radium demonstrations - interior department - John Crawford, Jr., Columbia University.

3:30 - Biograph, navy department.

4:00 - Biograph pictures (in motion) - interior department - (1) irrigating an alfalfa field in Arizona. (2) Indian girls playing basketball, U. S. Indian school, Phoenix, Arizona. (3) Indian sports at Laguna, N. M.: A horse race, a foot race, chicken pulling.

Colored stereopticon slides of irrigation scenes.

Wireless telegraphy, U. S. signal corps, war section inside.

Feeding hour for seals, United States Fisheries.

4:30 - Biograph, navy department.

5:00 - Biograph pictures (in motion) - interior department - (1) Pictures of Yosemite national park: Bridal Veil Falls, Vernal Falls, panorama from Artists' Point, the Merced stage, changing horses of the "Raymond Limited" at Wawona.

(2) Colored scenes of Yosemite Park. (3) Biograph pictures of Yellowstone national park: Fountain Geyser, Mammoth Paint Pots, Old Faithful Geyser; panorama of Lake Yellowstone; Great Falls of the Yellowstone. (4) Colored views of Yellowstone Park.

Colored stereopticon views of Yellowstone Park.

The government exhibit was prepared, installed and directed by a government board composed of:

Wallace H. Hills, chairman.	Dr. F. W. True
Wm. H. Michael	W. de C. Ravenel
John C. Scofield	G. W. W. Hanger
Cecil Clay	Williams C. Fox
John B. Brownlow	Dr. Roland P. Falkner
B. F. Peters,	Dr. A. C. True
Edward M. Dawson	William V. Cox, secretary
S. R. Burch	Wm. M. Geddes, disbursing officer
Carroll D. Wright	C. S. Goshert, clerk of board

To the efficiency and intelligent interest manifested by these officials was due the superior character of the exhibit, surpassing as it did all previous exposition efforts by the United States government.

Government Building:

The two principal structures erected for the indoor exhibit of the government, one for the main exhibit and the other exclusively for the fisheries display, cost approximately half a million dollars.

The government was fortunate in the site secured for its buildings. The main structure 764 feet long and 250 feet wide stood on an elevated site just east of the main picture of the Exposition. The palaces of Mines and Metallurgy and Liberal Arts with the picturesque sunken garden between them were directly west of Government building the great central dome of which was visible from the center of the grounds across the sunken garden.

Government building was the largest exposition structure ever erected by the United States for exposition purposes. It was distinguished from other buildings of the World's Fair in that steel was used in the construction. Immense girders of metal supported the superstructure so that the whole interior was an arch unobstructed by pillars. The grounds surrounding the government building were treated with great care, growing plants provided by the department of agriculture as exhibits being used largely.

The Government Fisheries building erected south of the main exhibit structure was one of the notable features of the Exposition, both architecturally and by reason of the exhibits it contained. The building was 135 feet square, of staff construction as to the exterior and of pure classic type of architecture. It was connected with the main Government building by a grand staircase leading up to the portico at the south end of the larger building. Exposition history shows that few exhibits are so popular as a display of living fish. The Fisheries building was crowded at nearly all hours of the day. Specimens from sea and river, lake and brook, were on view. In keeping with the general spirit of the Exposition there were exhibits of the processes of fish culture. Ranged around the walls inside of the building were nearly forty tanks with glass fronts most of these tanks being 12 feet in length and 5 feet in height. They were filled with the water best adapted to the species of fish which each tank contained. For the sea fish salt water was brought from the ocean. For fresh fish river water thoroughly filtered was used, the filter having a capacity of 100,000 gallons daily. For trout the water was cooled with ice. Fresh air was pumped into the tanks to keep the water pure and to furnish the fish the necessary oxygen. To hold the water brought from the ocean a huge tank was constructed at one side of the building, this tank having a capacity of 50,000 gallons. Four tanks of the capacity of 8,000 gallons each contained the filtered river water. In the center of the building was a pool 25 feet square for the seals. Lobsters, crabs, oysters and clams were included in the exhibits.

The Warship Reproduction

The navy department's chief exhibit was a section of a man-of-war reproduced. From the bow, back a distance of 118 feet, was shown not only the outer form but the inner equipment. The beam widened to 46 feet. From the water line to the top of the turret the height was 19 feet. The figure head of the reproduction was the actual figure head of the Olympia, Admiral Dewey's flagship in the battle of Manila Bay. On the main deck were two ten-inch guns in barbette turrets. In their proper stations on a flagship were figures of officers and enlisted men in uniform. These included the admiral, the captain, other official grades, the midshipman, the seaman, the marine and the apprentice. In the magazine were arranged the various kinds of ammunition. Offices, berths, baths, the sick bay and the dispensary were open to the inspection of visitors. Besides the big guns the armament included a six-pounder Hotchkiss, a one-pounder light automatic, a Gatling field piece. Anchors, windlass and gear were in complete order for service. On the starboard, a whaleboat swung from davits. On the port-side was a cutter. The firing tube had a torpedo. Water-tight bulkheads were shown. The berth deck was illuminated with electric lights. Electric fans insured circulation. The water-tight doors were shown in operation with electrical devices.

The exposition post office was located in the Government building. The force handled the incoming and outgoing mails just as they would have been bandied through any other post office.

The agricultural exhibit occupied a very considerable space in the Government building besides having 10 acres out of doors showing what the department was doing along practical lines for the farmers of the country.

The bureau of soils, the bureau of plant industry, the weather bureau, the animal industry bureau, all exhibited their work in practical forms.

In the space occupied by the department of state were exhibited many priceless historical documents and relics including the original treaty between the United States and France by which the transfer of Louisiana was agreed upon.

A feature of the interior department's display was a panorama made up of striking views of scenery in forest reservations and natural parks of the United States. Pictures of Yellowstone Park were taken especially for this. A moving picture machine showed the geysers in action, the park guards on duty, and the stage coaches filled with sightseers.

The Smithsonian institution and the national museum presented a display very complete and illustrative of the permanent exhibits of those two great institutions at Washington. There was a room full of rare birds and fishes. Beyond was an astrophysical laboratory. A bolometer which measured heat to one millionth of a degree was shown. There were transparent photographic plates illustrating the phenomena of eclipses and of eruptions on the sun. The national museum exhibited reproductions of extinct animals, a skeleton of a whale, a great quantity of Indian work, models of Aztec temples and fossils.

In a sentence the contents of the United States buildings might be summed up as showing "what the Government does for the people."

CHAPTER XX

THE PHILIPPINE EXPOSITION

Participation at a Cost of \$1,000,000—Exhibits Numbered 75,000—Villages of Nations—Moros, Visayans, Igorots, Bagabos, Negritos—The Walled City—Forty-seven Acres Occupied—Scouts and Constabulary—A Model School.

THE Philippine exposition as it was justly called owed its origin to William H. Taft who at the time the suggestion was made was governor of the archipelago. To make an exhibit of the Philippine products, manufactures, art, ethnology, education, and the customs and habits of the Philippine people at the Louisiana Purchase Exposition, Governor Taft induced the Philippine commission to act in the matter. An exposition board was appointed, consisting of Dr. W. P. Wilson, director of the Philadelphia commercial museum; Dr. Gustave Niederlein, an expert in exposition matters and chief of the scientific department of the Philadelphia institution; Pedro A. Paterno and Dr. Leon Guerrero. This board was appointed under an act dated November 11, 1902. Signor Paterno and Dr. Guerrero were of Manila. The Louisiana Purchase Exposition Company encouraged the Philippine exposition by an advance of \$100,000 in the early pre-exposition period and by contributing \$100,000 additional from the government loan. The cost of the Philippine exposition was over \$1,000,000, this sum not including the value of the postal, telegraphic and transportation facilities contributed by the insular government. The Philippine exposition occupied forty-seven acres of rolling woodland. The buildings numbered nearly one hundred, ranging from the taos nipa casa to the palatial Spanish administration building. In the structures were housed 75,000 catalogued exhibits and 1,100 representatives of the different peoples of the archipelago.

Shortly before the close of the Exposition several changes occurred in the organization. Mr. Paterno was succeeded by A. L. Lawshe, auditor for the Philippine islands, in August 1904. Dr. Wilson resigned the chairmanship of the board on November 1, 1904, to devote his time to the exhibits which were being tendered to the Philadelphia commercial museum. Mr. Lawshe succeeded to the chairmanship. Herbert S. Stone previously connected with the board as chief of publicity was appointed to the vacant membership on the board.

The Philippine Reservation:

The following is taken from the very interesting report made by Mr. Lawshe, Mr. Niederlein, Mr. Stone and Mr. Guerrero at the close of the Exposition:

Forty-seven acres of rolling country, lying for the most part on an elevation of the southwestern section of the World's Fair grounds, were assigned to the Philippine exhib-

it. The work of construction consisted in building a miniature city with streets and parks and complete sewerage, water and electric light and fire alarm systems. The ground plan included a central park or plaza beautifully ornamented by the landscape gardener's art, the sides of the quadrangle being occupied respectively by the cathedral, or educational building, the typical Manila house, the commerce building and the government or administration building, each of these beautiful structures being filled with appropriate exhibits. In addition, there were separate exhibit buildings devoted to forestry, to mines and metallurgy, to agriculture and horticulture, to fish and game and to ethnology, all artistically placed. A reproduction of the ancient walls of Manila commanded the main approach to the Philippine grounds. After crossing a miniature reproduction of the bridge of Spain which spans the Pasig River at Manila, the visitors entered the Philippine reservation through the gate. Villages typical of Philippine life from the lowest grade to the better class surrounded the main buildings, while on the south side were the quarters, camps and parade grounds of the Philippine constabulary and the Philippine scouts. The "Manila Observatory" with a large outdoor relief map was on the east. A hospital and office building was in a convenient space on the west part of the grounds. The usual complement buildings occupied by concessionaires, such as restaurants, places of entertainment, and booths, completed the scheme.

Each and every building constructed under Philippine auspices was typical of the islands. Vast quantities of bamboo and nipa brought from the archipelago were used in the construction of the native villages, as well as in the forestry, mines, agricultural and fish and game buildings. The visitor familiar with Philippine scenes was struck with the accuracy of the reproductions which he beheld.

While the expenditure for the exhibit far exceeded the amount originally contemplated by the Philippine commission due to many causes and conditions not necessary to discuss here, the consensus of opinion as gathered from visitors was that it was worth all its cost and more in giving to the people of the United States a more intimate knowledge of the resources and possibilities of the Philippine islands than they could acquire except by an actual and extended visit.

The exhibit was moreover an honest one. While all of the seventy or more groups of people in the archipelago could not be represented we had the least civilized in the Negritos and the Igorots, the semi-civilized in the Bagobos and the Moros and the civilized and cultured in the Visayans, as well as in the constabulary and scout organizations. In all respects, commercially, industrially and socially, the exhibit was a faithful portrayal.

The Philippine Board:

The official staff of the board was as follows:

Dr. Wm. P. Wilson, chairman.

Dr. Gustavo Niederlein, member and director of exhibits.

Pedro A. Paterno, member.

Dr. Leon M. Guerrero, secretary. Edmund A. Felder, executive officer.

Carson Taylor, disbursing officer.

H. C. Lewis, cashier.

Rev. Jose Algue, S. J., director of the Philippine weather bureau and director of the Philippine exposition observatory.

Captain M. C. Butler, U.S.A., director of supplies.

Captain Llewellyn P. Williamson, medical department, U.S.A., medical director.

Chas. L. Hall, chief of the department of agriculture.

Chas. P. Fenner, chief of the department of commerce and manufactures and representative of the American chamber of commerce of Manila.

A. R. Hager, chief of the department of education.

Dr. Albert E. Jenks, chief of the ethnological survey for the Philippine islands and chief of the department of ethnology, Philippine exposition.

Roy Hopping, chief of the department of mines and metallurgy.

Herbert S. Stone, chief of the department of publicity.

Alfred C. Newell, chief of the department of exploitation.

Wm. N. Swarthout, editor of the Manila Times, on special duty.

George P. Linden, curator of exhibits and in charge of forestry.

Captain F. E. Cofren, P.C., chief of the war exhibit.

Antonio G. Escamilla, assistant secretary.

Captain Geo. S. Clark, purchasing agent.

The Philippine exposition was formally opened to the public on June 18th when Colonel Edwards as representative of the secretary of war transferred the exhibits to President Francis. In the presence of a large crowd, the parade of eleven hundred natives ranging from the uniformed scouts to the simply garbed Igorot passed in review before Secretary of the Treasury Leslie M. Shaw, President Francis, General John C. Bates, commanding the northern division of the United States army, Colonel Edwards and other visitors. The stand was decorated with American flags and the arms of the Philippines with the devices of the different provinces. The exercises were opened with prayer by Rev. Jose Algue, S. J., director of the Philippine weather bureau. Dr. Wilson, chairman of the board, then spoke of the collection of exhibits and the preparation of the exposition. He was followed by Colonel Edwards who read a number of congratulatory telegrams from President Roosevelt, Secretary Tart and others. Addresses were made by Mayor Wells, President Francis and Dr. Niederlein, director of exhibits.

The forestry exhibit, of which George P. Linden was chief, was installed in a handsome and characteristic bamboo and nipa structure of the bungalow type. The exhibit itself was the wonder and admiration of visitors, those in a position to know asserting that it was the most complete and elaborate of its kind ever gotten together. The interior of the building was divided into four parts of which two were utilized to show the woods in the rough and planed and polished states; a third being used to display the forestry by-products, and the last to contain the finished products made into furniture. This display showed the skill of the Filipino workmen in cabinetmaking, carving and inlaid woodwork and demonstrated the possibilities of the various woods. A section of the building was lined with show cases in which were principally displayed gums, rosins, medicinal plants, seeds, fruits, oil seeds, oils, and perfumes.

The bureau of forestry, Manila, exhibited specimens of tested timber, models showing transportation of logs and a large collection of photographs. The government laboratories presented a large herbarium of the Philippine flora. Through the entire building suspended from the rafters were basts, fibers, hammocks, raincoats, and woodenware mounted on shields. On the veranda, rattans, bamboo timber in the rough, tan and dye barks, fruits of timber trees, rattan chairs and benches were displayed.

The Archipelago's Resources:

While in the Philippines, Dr. Gustavo Niederlein of the Philippine exposition board conceived the idea of making a commercial exhibit. This was carried to a most successful conclusion and awakened much interest in Philippine commercial matters resulting in benefit to both American and Philippine business men. These exhibits consisted chiefly of hemp, sugar, tobacco, copra and liquors, 8,000 in all.

The objects belonging to the department of liberal arts, of which Dr. Leon M. Guerrero was chief, were installed in the two wings on the ground floor of the government building while the fine art exhibit was placed in the art gallery formed by the rear wing of the building.

A collection of mollusks of great scientific value belonging to Mr. Quadras and a collection of insects prepared by Charles S. Banks were placed in this building.

The needle work in silk cloth, pina and cotton, together with work in leather, silver and

gold, and musical instruments noteworthy on account of perfect workmanship, as shown in the piano of Mr. Trinidad, were well displayed for public inspection. Among the musical productions should be specially mentioned the *Tonopsis Mecanica* of Mr. Canseco, an apparatus which by purely mechanical means gave the chords of any melody.

The main installation of fine arts was made in the reception hall of the government building both for paintings and sculpture. Of the first mentioned there were sixty-one selected for special merit, and of the second twenty-eight notable for their artistic inception and execution. The remainder were divided between the educational building and the Manila house, there being eighty-five oil paintings aside from water colors and some drawings in crayon, thirty-five pieces of sculpture and eight wood carvings. Among the pieces of sculpture there were included ancient pieces which illustrated the history of this branch of fine arts cultivated by the Filipinos with special application to religious iconography.

The Philippine weather bureau, of which Dr. Ramon Lacson was chief, exhibited a model of a first-class meteorological seismic station equipped with the very latest instruments. This model, unlike the others on exhibition at the World's Fair, was in working order and all the recording instruments were continually kept in motion by the head mechanic of the Manila central observatory, Roman Trinidad. The Manila observatory exhibited also a set of relief maps each of which was an original map, having been built by the mechanics of the Manila observatory under the direction of Rev. Jose Algue, B. J. The most important of these maps and the one that evoked the general admiration of visitors was the huge outdoor map of the Philippine islands as defined by the Paris treaty in 1896 and the subsequent treaty with Spain in 1899. This map measured 110 feet from north to south and 76 feet from east to west.

The geological section consisted principally of the big outdoor relief map of the Philippine islands already described. This map was supplemented by eight other relief maps showing the rainfall and wind direction in the islands both during the dry and wet seasons, the mines and mineral springs, the political and religious divisions, the ethnography, the earthquake frequency, the forestry and agriculture. There were also exhibited several maps of less importance such as the relief map of Manila Bay, the map of Manila and surrounding towns used by General Otis and early maps of the Philippines.

The educational exhibit, of which A. R. Hager was chief, was installed in a large well lighted building which was a diminished model of the Manila cathedral. In preparing the exhibit, the first step was to enlist the co-operation of the American and Filipino teachers in the government schools, about two thousand in number, and as many as possible of the teachers of private schools. The educational exhibit contained collections sent by four hundred and thirty-eight exhibitors and consisted of eight thousand five hundred and forty-two exhibits.

A Model School:

The model school was in session in a typical nipa and bamboo school house especially arranged for exhibition purposes. It was in charge of by Miss Pilar Zamora, a Tagalog, who was a teacher in the Philippine normal school. Two sessions were held daily except Monday, the first from 9 to 10:30 for children from the Visayan village, and from 10:30 to 11:30 for children from the villages of the non-Christian tribes. The latter included children of the Bontoc Igorot, Suyoc Igorot, Negrito, Bagobo, Tinguian, Samal Moro and Lanao Moro tribes.

The number of visitors to the educational building and model school was large, those visiting the school during the two and one-half hours' session by actual count often exceeding two thousand daily. A register of visiting teachers was kept and contained some thirteen thousand names. Many of the schools which sent exhibits included letters from the pupils to American boys and girls. These letters were distributed to teachers who were interested and who agreed to see that they were answered. This promised to result in an interesting correspondence between school children in the Philippines and those in all parts of the

United States.

While the Filipino students were visiting the Exposition a number of them were on duty at all times in the educational building. They were instructed as to the location or the various exhibits and points of particular interest and their services in explaining these points to visitors were valuable. They made an admirable impression. The agricultural and horticultural exhibit, of which Charles L. Hall was chief, consisted of all raw and manufactured products of the soil, together with crude native implements employed in the cultivation of land as well as native machinery for the preparation of such products for the market, illustrating in as complete manner as possible the old processes of raising the various crops of the islands.

Among the cereals were large and interesting collections of rice both hulled and in the hull, representing hundreds of varieties and sub-varieties grown in the different islands of the archipelago. These varieties were divided into two groups; palay de secano or mountain rice which is cultivated without irrigation and palay de regadio or valley rice which is cultivated in rice paddles and by irrigation. There were shown samples of wheat grown at some of the experiment stations established by the insular bureau of agriculture. Samples of corn or maize, millet, sorghum, peas, beans and lentils were exhibited. There was a large collection of all kinds of tropical and European vegetable seeds together with seeds of various kinds of pumpkins, squash, calabash and cucumbers grown in the islands. The collection of oils and oil producing seeds consisted of samples of sesame, peanut, castor, pili, palo maria, tangan-tangan, tuba-tuba and copra or dried coconut.

The delicately scented Ylang-ylang extract was included in the above group, being extensively used as a base for the best Parisian perfumes. Flours and starches of various kinds such as are produced from rice, manioc, sweet potatoes and palms were represented. Samples of all kinds of condiments and peppers, also achuete and indigo, were extensively exhibited. The collection of wild and cultivated fruits, vegetables and tubers preserved in formaldehyde was a very interesting one and undoubtedly the first collection of its kind seen in America.

Samples of unrefined sugar of different grades together with the preserved cane were displayed with the crude native machinery used in the extraction of the sugar.

Samples of alcohol, wines and vinegar produced from various palm saps or grain and sugar were well represented. The collection of fibers and textiles was a very complete one. It consisted of several varieties of shrub cotton in white, yellow, and brown varieties together with the cloth made of this cotton by natives on crude hand looms and the tree cotton variety which is principally used by the natives for filling pillows. In the fiber exhibit were samples of hemp, maguey, pina and texture barks of all kinds together with samples of cloth and rope manufactured from them.

The native agricultural tools and implements, sugar cane mills, wagons, sleds, and all kinds of native crude machinery were illustrated both in natural sizes and models. A large collection of native hats and baskets in endless variety was scattered throughout the building.

The conservatory built in the center of the building on the south aide contained a very interesting collection of orchids, cycas and some tree ferns from the Philippines.

Arrowhead Lake:

Fish and game and water transportation exhibits, in charge of Chief Jose Quadras, were in the fish and game building situated in the extreme northern part of the exposition grounds, and overlooking Arrowhead lake. The material used in the construction with the exception of the floor was entirely Philippine, consisting of nipa, palm-leaf thatch, bamboo, rattan and palm stems. The structure was in the shape of the letter "T," had a floor space of forty-four hundred square feet and represented a "camarin" or Philippine warehouse.

At the entrance was a fine specimen of the tamarao, a species of wild buffalo; to the left was quite a complete collection of birds, well mounted and scientifically labeled, and to

the right was a fine collection of the enormous fruit bats and some of the skins of these bats which are of great commercial value. Large collections of birds' eggs attractively displayed; numerous specimens of deer and boar, carabao heads; tusks and a few specimens of stuffed wild boars and deer; a fine specimen of python twenty-one feet long and one foot in diameter, and a collection of crocodiles, large iguanas and lizards were prominent features in the collection of reptiles.

The collection of fishing nets, fish traps, and other apparatus contained samples of every conceivable variety used in the Philippine islands, including a full-sized fish run in the middle of Arrowhead Lake, made of bamboo and installed under the direction of Chief Quadras by members of the Philippine constabulary. The water transportation exhibit was represented by numerous boats and smaller craft from the primitive "dug out" to the large Moro pirate junk, including also a large casco or lighter with its characteristic suali curved covering used in the Philippines for transporting goods from the vessels in the harbor to the docks.

The mines and mining exhibit, in charge of Chief Roy Hopping, was a most interesting display of the numerous mineral resources of the archipelago. The exhibits which attracted popular attention were the stone water filters some of which were installed in bamboo racks made by Filipinos; these were kept in operation continually; the Bagobo blacksmith shop set up by a Filipino, complete in every particular; the model of an Angat iron foundry, and the complete outfit showing the Igorot method of crushing, panning and smelting gold with the wooden "pan;" the palm leaf draining buckets used and the gold "buttons" produced.

The fossil elephant brought by Jaun de Jaun from the Cagayan valley in Luzon was determined by Prof. Henry F. Osborn of the American museum of natural history to be the stegodon, an extinct type and ancestor of the present elephant of Asia, proving that the Philippine islands were formerly connected with Asia by land.

Philippine Ethnology:

The ethnological exhibit, of which Dr. Albert E. Jenks was chief in charge, was displayed in the ethnology building constructed around three sides of a square open court. Among the exhibits were Bontoc Igorot head-axes, Bontoc Igorot basketwork utensils used in domestic and field activities; also Benguet and Banawi Igorot carved wooden food bowls and spoons. There were also men's basket-hats, women's head-dress beads, men's bear-tusk armlets and the ear rings and ear plugs worn by both men and women. Bark garments of both the men and women were shown; some garments were of whole bark flayed from a tree and soft like buckskin; others were woven of spun bark.

The ceilings and walls of one hall were covered with bark and cotton clothing made by the various Igorot people, such clothing as women's skirts and jackets, men's breech cloths and shirts and the various burial garments used upon both men and women. There was also a very large collection of shields and spears of the various Igorot peoples.

The third hall contained almost exclusively materials from the various Mohammed-anized people of the archipelago, commonly called "Moros." Among these exhibits were Moro mats, various personal ornaments, saddles and bridles made and used by the Moros, a collection of crude string and wind instruments gathered from many places in the archipelago; a set of Moro wooden musical instruments; also a set of bronze gongs used by Moros as musical instruments and for beating sound messages from place to place; beautiful specimens of Moro armor made of brass and carabao horn; a small collection of a unique knife called the "pira" and used exclusively by the Yakan Moros of Basilan; a very rare collection of knives called the "kris" having a wavy blade and used by the Samal, Manguindanao and Lanao Moros of Mindanao.

About twenty brass cannons made and used by the Moros were displayed on floor racks. The walls and ceiling of the hall were covered with brilliant clothing woven and worn by the Moros, consisting of cotton and silk pantaloons, jackets, skirts and head-dresses

worn by both the men and women. A fine collection of Moro shields, spears and hats was exhibited.

The typical Manna house, Victor J. Hall in charge, was a building of the wealthy class, with shell windows. The exhibits contained therein consisted in the main of handsome hand-woven fabrics and embroideries, prominent among which were the famed jusi and pina cloths and sinamay fabrics. There were besides many pieces of hand carved furniture and works of art. There were two hundred and twelve artificial flowers; eleven hundred and seventy pieces of cotton goods; two hundred and eighty-one pieces of fancy goods; thirty-two pieces of embroidery; one hundred and thirty-three pieces of just cloth; three hundred and sixty-two pieces of sinamay cloth; one hundred and ninety-one pieces of pina cloth and forty-two pieces of silk. The walls, ceilings and show cases were decorated with seven hundred and forty-eight hats, one hundred and sixty-three baskets, five hundred and seventeen mattings, and two hundred and thirty pieces of pottery.

Scouts and Constabulary:

The battalion of Philippine scouts, Major Wm. H. Johnston commanding, occupied a camp on the Philippine reservation. During the entire time of its station there the battalion gave a parade and exhibition drill each evening about sunset, and a one-hour drill in the morning for instruction, besides a half hour drill during the day for exhibition.

At the request of the President of the Louisiana Purchase Exposition and in compliance with orders from headquarters the battalion participated in many street parades within the exposition grounds. During several weeks, in response to a request from the same source, a parade and drill were given each Wednesday evening on the plaza SL Louis. The fact that they gained flesh in a strange climate while rendering more than usual military service and fatigue indicated that the Filipino would grow in stature and strength if fed upon the American ration. Discipline was excellent, very few of the scouts being tried by court martial or confined. The general good behavior in and out of camp was the subject of favorable comment by visitors to the exposition. The parades and drills were viewed by thousands of visitors who generously applauded the proficiency of the men.

The Philippine constabulary battalion, Major Amos D. Haskell commanding, was quartered on the Philippine reservation. From the time of the arrival until the various nipa buildings of the Philippine exposition were completed about seventy men were detailed daily from the battalion to participate in the construction. In addition to the regular drills of instruction, a dress parade followed by an exhibition rifle and calisthenics drill was given daily, except Sundays, usually in the afternoon. The band performed regular military duties, playing for all parades and exhibition drills. It also furnished music for the opening ceremonies and other official functions at many of the state buildings. It played daily evening concerts in the band stand of the Philippine reservation. It made a two days' trip to Louisville and a three days' trip to Chicago and Milwaukee, playing at the former place at the conclave of the Knights of Pythias and at the latter for the Wisconsin state fair; both trips were for the purpose of advertising the Philippine exposition.

The Visayans:

The Visayan village, of which M. R. Healy was manager, was situated on Arrowhead Lake and covered about four acres. It was a typical Filipino village consisting of an administration building containing office, store rooms, and a large reading room where the Manila papers with some Chinese and Japanese papers were on file; also a theater, market, Catholic church, and eight native houses with work rooms arranged underneath. The village was laid out in the form of a plaza with one side street of native houses, all the buildings in the village with the exception of the church and the cuartel being built of bamboo and nipa. The village had two entrances. In the market the principal manufactured articles of the Philippines were on sale, and everything sold could be seen made by the natives in the

village. In one house there were four jusi looms; in the next three pina looms; another had two sinamay looms; in the other houses tour bat makers manufactured hats and tour mat makers showed how mats and baskets were made; five natives were employed in making canes, wood-carvings and novelties. There was a family of fishermen who illustrated the methods of fishing practiced in the Philippine islands. Two carabao and all of the various vehicles used in the islands showed the methods of transportation.

The church was built to accommodate the natives of the village, who were Roman Catholics. Services were held every Sunday by one of the Jesuit fathers of St. Louis. The church was dedicated by Cardinal Satolli, assisted by Archbishop Glennon; it was a great attraction to visitors.

The theater opened at 11 o'clock a. m. Performances lasting half an hour were given hourly until 6 p. m. The theatrical troupe consisted of an orchestra of sixteen pieces, twelve singers and six dancers. All of the music, songs and dances were typical of the Philippine islands. The concluding number on the program was the "Star Spangled Banner," sung in English by the entire company.

Moro Villages:

The Moro villages, of which Frederick Lewis was manager, were inhabited by Samal and Lanao Moros. The Samal Moro village consisted of seven native dwellings for the accommodation of the natives; an administration building in which was installed the exhibit of arms and cloth, and a theater in which performances were given at stated intervals, the performances consisting of the various native dances peculiar to these people.

The native houses of the village, counterparts of those found in Magay, the Moro section of the town of Zamboanga in Mindanao, were constructed over the water of the lake on piling driven by hand by the natives, bamboo platforms leading out to them. Every detail and characteristic of Samal Moro architecture was carefully adhered to, the dwellings being complete in every respect. As at home, the materials entering into the construction of these houses consisted of bamboo, nipa and rattan, the first being used entirely for the framework of the houses, the second for the sides and thatching and the last mentioned being used in fastening the structure together; no nails were used in the construction of the dwellings. The work was done by the men of the village.

In addition to illustrations of the dally home life, of the dwellings and household furnishings, and of the natives themselves dressed in their native garb, the public was given the opportunity to see these people engaged in their native industries and occupations. The boats and fishing tackle were on inspection and in actual use. Dances were given at stated intervals throughout the day. Native music was rendered from the opening to the closing hour dally; the children disported themselves in their boats and in the water from morning to night; every possible attraction introduced that might prove interesting and instructive to visitors was presented.

Work on the Lanao Moro village was commenced at the same time as that upon the Samal Moro village, the village consisting of eight native dwellings, an administration building and a native theater. The native houses were built in accordance with the prevailing style and ideas of the inland Moros, differing materially in appearance from those of the Samal Moros.

On August 7th, in response to a telegram extending an invitation to visit President Roosevelt, the manager conducted Datto Facundo and two followers to Washington. After a short interview with the President at the White House in which the datto assured the President of the loyalty of himself and people to the United States government the party was shown through the various government buildings, the astonishment of the natives being too great for expression.

Igorot Tribes and Negritos:

The Igorot village, of which Dr. T. K. Hunt was manager, proved to be the most interesting of the group to visitors if gate receipts were an indication. In this exhibit the people lived just as they do at home. Every day was shown blacksmithing, weaving, metal working and copper and ore reduction. There was dancing every hour by each of the three tribes, Bontoc, Suyoc and Tinguiane. At intervals spear throwing and native ceremonies were to be seen. All the younger Igorot attended school one hour each morning at the Philippine model school, and one hour in the afternoon under the direction of the Berlitz school of languages. There was a two hours' singing lesson in the afternoon for the younger members who learned all the national airs in English and took great interest in the work.

The houses of the chiefs and the principal men were connected with the manager's office by telephone which they used and appreciated. The chiefs also had typewriters and learned to use them. All of the Igorot saved money, from one hundred to five hundred dollars each. Some learned to carry on a conversation in the English language. A few could read and write. The Negrito village, of which Valentin Semilla Guevara was manager, contained the lowest type of inhabitants of the archipelago. These people were the most primitive and were regarded as the true aborigines. The buildings in the village were like those in the other villages, characteristic of the life of these diminutive people. The natives of the village were equipped with the household implements used in their daily life, including arms and apparatus for fishing, objects used in ceremonies, dances and music, and instruments used in making baskets, bows and arrows, combs and in planting rice. The whole represented an exact imitation of the surroundings in the home life.

The daily program in this village was as follows: the celebration of marriages after the manner of ceremonies among the Negritos of the forest; celebration of annual memorials for deceased relatives, with the accustomed ceremonies; a public meeting for the election of chiefs for the villages; general dances in which all sang what was called "amba;" shooting of arrows by all male Negritos; duet of a Negrito with a cane flute called "bans!," and a female Negrito singing; the same with the "barimbaw," a musical instrument made of bamboo; planting rice in dry land by means of the "bagal" under the song of the "barimbaw;" making fire by means of bamboo sticks; collection of bee's honey by means of a bamboo called "cana-boja;" bunting of wild hogs or "jabali" without baiting and without dogs; making of combs and bracelets by the women and arrows by the men; weaving of "petates" or "bay-ones" by women with leaves of the "buri" palm; pounding and cleaning rice; preparation of the poisonous "nami;" preparation of rattans for binding purposes, and the making of "bilaos" and bamboo baskets.

The Bagobo village, of which C. L. Crouner was manager, was not opened until September 12th, the members being detained several weeks at the St. Louis quarantine station on account of a case of smallpox which developed before their arrival. Their first manager, Carson Calhoun, died of the disease as did several of the natives.

The daily exercise in this village began at 9:30 a.m. with the rendition of native music which was kept up throughout the day. Native dances peculiar to these people, were given every half hour, the first dance at 10 a.m. and the last at 6 o'clock in the afternoon. These dances consisted of the tribal by the men; the women's tribal dance; a spear dance and a bolo dance. Each performance was concluded by the introduction of Datto Bulan who exhibited his wonderful growth of luxuriant hair. An explanation of the meaning attached to the colors of the costumes worn by the different men of the tribe was given.

Upon the conclusion of the program of dances the public was invited to inspect the native dwellings and the furnishings, all of which were distinctive and characteristic of the Bagobos. The various native traps manufactured and used by the people, consisting of a monkey trap, a chicken trap, a carabao trap, and a wild hog trap were operated and explained in detail to visitors.

The weaving of native cloths and fabrics was illustrated, explanations being given with respect to the materials, the dyes used, and the methods of securing the same.

The manner of entertaining a datto was also demonstrated, music on the native guitar being rendered by the women who at the same time executed a peculiar dance.

CHAPTER XX I

THE IRISH INDUSTRIAL EXHIBIT

**A Special Feature—More Than 500 Exhibitors—The Dedication—
Ireland's Technical instruction illustrated—The Irish Village—His-
toric Structures Reproduced**

THE Irish industrial exhibit was installed in the industrial hall of the Irish village. This hall was a building 318 feet long by 78 feet wide. The exhibit was assembled under the auspices of the department of agriculture and technical instruction for Ireland. It was encouraged by an advisory committee of public-spirited Irish Americans, of which committee Edward Devoy of St. Louis was the chairman. When installed, the Irish industrial exhibit became one of the most interesting special features of the Exposition. The goods and exhibits from over 500 exhibitors were displayed in handsome wall and center cases painted dull black and stenciled with Celtic decorative designs. Demonstrations were given during exhibit hours, in carpet, linen and homespun weaving, in wool carding and spinning by hand, lace making, embroidery, drawn-thread work and crochet work by expert workers from Donegal, Belfast, Castlebellingham, and Carrickmacross.

On the 11th of June the formal dedication of the Irish industrial exhibition took place, Edward Devoy presiding. Among those present were the President of the Exposition, Archbishop John J. Glennon, the mayors of St. Louis, East St. Louis and Philadelphia, the advisory committee, the representative of the department of agriculture and technical instruction for Ireland, the president of the Irish exhibit company, T. F. Hanley, and Directors of the Exposition D. C. Nugent, John Scullin and Festus J. Wade.

In explaining the purpose of the Irish industrial exhibit T. P. Gill, secretary of the department of agriculture and technical instruction for Ireland, said:

The general idea of the exhibition might be summed up in a sentence. It was to present to American eyes a sort of conspectus of industrial Ireland in her actual condition of today—such an exhibit illustrative of her resources and her general progress as might prove to American and Irish American business men that Ireland was now a country advancing in industrial spirit and offering good guarantees for the investment of capital. That was the principal aim. But there were other aims. To the purely industrial and educational exhibits there had been added through the co-operation of such bodies as the arts and crafts society of Ireland, of which Lord Mayo was chairman, and of a committee formed in New York of which Bourke Cochran was president, Mr. Crimmins treasurer, and men like Dr. Emmet and Mr. MacAdoo were leading members, an historical and artistic section. This section included specimens of old Irish art craftsmanship, portraits of distinguished Irishmen and Irish women, and other personages connected with the history of Ireland, relics from different periods in Irish history, autograph manuscripts and other mementos connected with the history of the Irish in America. This collection added interest and value to the general

exhibition, and incidentally served to bring out in a new way the part which their race played in the early history of the great republic.

J. Clibborn Hill, representing the department of agriculture and technical instruction for Ireland, in his report upon the Irish industrial Exhibit had the following:

The splendid site provided by the Irish exhibit company was at the northern end of the grand Plaza of St. Louts, the most beautiful and most frequented part of the fairgrounds, and about one hundred yards from the main entrance. There were two entrances to "Ireland," one on this side, and another facing the famous Pike. It was undoubtedly one of the best sites on the grounds as hardly any visitor to the Fair could fail to pass the entrances.

The entrance gate facing the Pike was a full-sized reproduction of St. Lawrence gate, Drogheda, and its commanding proportions attracted the attention of visitors from the westerly portion of the grounds, where it was visible for over a mile. The facade of the Irish exhibition overlooking the Plaza of St. Louis was a reduced model of the old Parliament House of Dublin, now the Bank of Ireland. This building was used as a restaurant and was one of the largest and most popular on the fair grounds. Adjoining this building was a reproduction of the Round Tower of Clonmacnoise and a miniature of Ross Castle.

As one entered the courtyard by the St. Lawrence gate an accurate reproduction of the cottage of the McKinley family in County Antrim was seen. Next to this was a building known as Malahide Cottage which was used as a sales department and in which the various wares were displayed for inspection and sale by the Irish exhibit company. In the northwest corner of the enclosure stood an excellent full-sized reproduction of Cormac's Chapel on the Rock of Cashel in front of this was erected a full-sized cast of the celebrated Cross of Muredach at Monasterboice. To the north was a full-sized model of the keep of Blarney Castle, behind which was the largest and best equipped theater on the exhibition grounds, capable of holding over 1,500 people. The industrial Hall formed the east side of the enclosure, the architecture being Norman-Irish in character without being a copy of any particular building in Ireland. In the center of the courtyard was a fine band stand where the Irish band played selections at intervals. All of these buildings were brilliantly illuminated at night by thousands of glow lamps.

The Irish exhibition, in its representation of the historical and artistic aspect of the country, which included specimens of Irish art-craftsmanship ancient and modern, and in showing the latest advances in education, agriculture and the art and industrial products of Ireland, undoubtedly created a fresh train of thought about Ireland in the minds of the American public. It has been the means of bringing the Americans of Irish origin into closer touch with Irish manufactures, making them feel a legitimate pride in the land of their forefathers, besides raising their status to a considerable degree in the country of their adoption.

The experiences of myself and my colleagues in meeting many hundreds of visitors, Americans and Irish Americans from all parts of the states, convinced us that these results could never have been brought about by any system under which the Irish exhibits might have been distributed among the various sections allotted to the different products throughout the Exposition. The latter mode of exhibiting, however, remained open to all Irish manufacturers who desired to compete for awards, and several of them duplicated their exhibit with the British royal commission and with the Irish exhibit company.

The scheme of the Irish industrial exhibit was to show not only the goods manufactured at the present day but to demonstrate the possibility of industrial development in the future. While the results may not be noticeable for some time to come and will depend on the manner in which Irish manufacturers take advantage of the situation, this display has without a doubt been productive of great potential good in creating a new interest in Irish productions, from which an increased demand should naturally follow. Before Ireland's dis-

play in America there was a vague idea in the minds of the majority of the Irish Americans and the American public generally that she produced only a few things of some commercial value, such as linens, lace, potatoes, porter and whiskey, for the foreign markets. It was therefore a surprise to them to find that she was not only capable of manufacturing many staple articles but of producing them of such high quality and in such variety that they compared most favorably with those sent by other countries, and were in many instances better than the best domestic goods. The effect of the exhibit will not only be felt by the firms which had goods on view but must eventually extend to all representative firms in Ireland, as a result of the reputation which has been given to Irish goods in general.

During the time the exhibition was open, from the 11th of June to the 1st of December, the Irish industrial exhibit was visited by the governors and their staffs of twenty-one states and territories; many United States senators and congressmen, and the mayors of nearly all of the large cities; Cardinal Satolli, Archbishop Ireland, and many other prominent churchmen; the British delegates of the inter-Parliamentary Congress; many English, Scotch and Irish members of Parliament including John Redmond and his party; delegates attending the great Democratic National Convention which was held in St. Louis, and a large percentage of the twenty-million persons who visited the World's Fair from all quarters of the globe.

CONCESSIONS AND UTILITIES

CHAPTER I

THE CONCESSIONS

Classification of the 540 Contracts—Gross Receipts Over \$13,000,000—Jerusalem and Philippine Privileges—Foreign Exhibitors' Sales—Inside Inn the Best Paying—Exposition Percentages—Relations of Concessions to Admissions—Gross Receipts and Exposition's Share

THERE were negotiated and granted in all a total of 623 concessions contracts, of which number 83 were for one cause or another inoperative. There were, therefore, 540 concessions operated during the period of the Exposition. These contracts may be classified in character as follows:

Amusements, Educational and Historical	53
Transportation.....	11
Restaurants and Lunch Rooms	60
Slot Machines	9
Soft Drinks.....	16
Stereopticon Views	9
Cigars, Tobacco, Etc.....	12
Candy and Confections	20
"Official" Designation.....	10
Hotel	1
Souvenirs and Novelties.....	153
Merchandise and Miscellaneous	187
	540

About twenty-five restaurants were operated as sub-concessions in connection with amusements.

Concessionaires' receipts under concessions operations, as shown by the accounting company's report, were more than \$13,000,000.00.

The concession paying the greatest revenue to the Exposition was the Inside Inn, the revenue from which amounted to \$254,126.39.

The concession yielding the smallest tribute to the Exposition was that of F. H. Kiser who paid to the Exposition the sum of 38 cents.

Director of Concessions and Admissions Gregg, in his report, presents the following analysis:

It may be interesting to note the comparison of concessions earnings per paid admission and per \$1.00 of cash receipts from admissions to the better known and more successful of American expositions.

Concessions Revenue per Paid Admission:

	Paid Admissions	Concessions Revenue
Omaha	1,778,250	17-24/100 cents
Chicago	21,450,141	19-3/10 cents
Buffalo	5,306,859	26 cents
St. Louis.....	12,804,616	29-93/100 cents

Concessions Revenue per Dollar of Cash Receipts from Admissions:

	Paid Admissions	Concessions Revenue
Omaha	\$801,515.47	28-24/100 cents
Chicago	10,339,326.20	41 cents
Buffalo	2,509,8683.0	54 cents
St. Louis	6,048,418.15	61-24/100 cents

The operations of the concessions department required a large force or employee in the various branches of the work. This force varied in number from a maximum of 425 to smaller numbers at various periods as the necessities required. The aggregate expense of the department was as follows:

Pre-Exposition	\$ 22,938.31
Exposition and Post-Exposition	192,061.69
	\$215,000.00

The total was approximately an expense of 5.8 cents against each dollar of revenue earned for the Exposition through the department of concessions.

When the nature of the duties and responsibilities assigned to the concessions department and the difficulties attending the administration of these duties to the advantage and benefit of the Exposition are considered, it will, I think, be promptly acknowledged that the revenues secured have been greater proportionately to the paid attendance than those at any previous exposition in the world's history, and that the percentage of expense has been held within reasonable limits.

In explanation of the expense account, it may be proper to give some information concerning the principal items; this information may be generalized as follows:

Pre-Exposition expenses, including dedication period	\$22,938.31
Turnstiles, chopper boxes and ether mechanical appliances	7,823.76
Rental cash registers, autograph records, etc.	3,000.00
Concessions tickets and checks	12,000.00
Payroll for office forces, inspectors and traveling auditors	24,632.55
Payroll for gatemen, checkers and cashiers	75,000.00
Haskins and Sells, certified public accountants	17,000.00
Secret service.....	13,000.00
Miscellaneous supplies, office furniture, books, records and stationery.....	10,000.00
Salary, chief of department, for twenty-two months	7,573.00
Miscellaneous expenses.....	2,032.88
	\$215,000.00

Gross Receipts and Exposition Revenue:

The gross receipts of the several concessions and the net collections realized from them by the Exposition Company as shown by the books of the auditor, to October 31, 1905, were as follows:

No.	Concessionaire	Known As	Gross Receipts	Net Collections
42	Administration Restaurant Co.	Restaurant	17,413.85	1,769.51
42	Administration Restaurant Co.	Restaurant	142,035.15	31,245.91
7	Asiatic Exposition Co.....	Mysterious Asia	162,995.30	35,326.90
582	Amsterdam Sliver Co.....	Jewelery and Novelties		200.00
37	Aloe Instruments Co. A. S.....	Optical Salesrooms.....		45,000.00
54	Art Metal Works	Art Metal Souvenirs	4,314.05	1,683.74
583	Amsterdam Leather Co.	Leather Good		200.00
84	Akoun, Ferdinand.....	Temple of Mirth	39,232.15	16,863.68
85	Anthracite Mining Exhibit Co.....	Restaurant	19,308.18	158.46
86	Anthracite Mining Exhibit Co.....	Coal Breaker.....	11,960.55	69.88
192	American Cereal Co.	Rice Puffs	8,723.65	2,226.41
109	American Talking Scales Co.....	Talking Weight Machines.....	4,977.40	2,500.00
121	Abd-el-Nour, John.....	Silks and Cocoons	3,145.80	1,227.11
122	Ancient Rome Exhibit Co.....	Ancient Rome.....	46,904.60	16,117.36
130	American Concessions Co.....	Popcorn and Peanuts	44,984.13	23,545.07
595	Anderson, Mrs. Eva.....	Cigars and Cigarettes	613.65	167.38
215	American Electric Heater Co.....	Restaurant	26,828.33	6,779.71
233	American Electrical Novelty Co.	Electrical Novelties.....		1,000.00

No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
354	Allan-Pfeiffer Chemical Co.	Perfumes	1,824.70	508.86
368	Atkinson, Geo. F.	Wooden Novelties	1,629.90	539.20
569	Abergo, O. B.	Restaurant	4,883.25	1,259.63
378	Anderson, David Silverware	Silverware .....	.....	810.00
397	American Fountain Pen Co.	Fountain Pens .....	.....	320.00
430	Arnold & Co., F. R.	Papier Poudre .....	.....	360.00
557	Austin & Craw	Toys and Games	350.70	324.95
607	Alte, Viscount	Portuguese Wines	860.79	215.28
19	American DeForest Wireless Co.	Wireless Telegrams	97.62 .....	.....
22	Booth, G. M.	Restaurant	149.85	31.97
24	Byrnes, John F.	Restaurant	27.05	5.41
42	Bowser, Mrs.	Restaurant	468.32	95.67
4	Bowen, John	Restaurant	10,500.88	2,102.08
268	Blanke, C. F.	Dairy Lunches	57,441.55	21,044.92
31	Blanke Tea & Coffee Co.	Grant's Log Cabin	24,157.32	8,203.08
88	Bell Co, The Geo.	American Gem Stones .....	.....	3,220.00
47	Bois, Stanley	Ceylon Tea	897.85	3,324.02
67	Bird Cage Cafe Co.	Restaurant	103,640.23	25,982.28
78	Behnke & Willman	Restaurant	27,183.71	6,690.15
79	Boynton, Paul	Water Chutes	100,802.76	31,746.59
116	Baker & Co.	Walter Chocolate	3,540.85	884.95
118	Barrett & Barrett	Apple Cider	4,213.55	1,332.62
124	Becker & Company, L. A.	Soft Drinks	8,567.45	2,396.72
581	Blanke, Albert G.	Souvenirs .....	.....	285.00
135	Berger, James	Card Printing	1,383.40	1,992.52
138	Boberg, Ferdinand	Statisticum	3,514.85	8,024.28
178	Bates, William	Window Shades .....	.....	360.00
176	Bender & Saap	Oriental Goods .....	.....	1,140.00
608	Brewerton, A. W.	Crayon Portraits .....	.....	70.00
191	Barrios Diamond Co.	Imitation Diamonds .....	.....	6,421.07
199	Burd, W. D.	Pearl and Shell Goods .....	.....	600.00
204	Benham, J. W.	Indian Goods	10,733.39	4,706.74
225	Barnhart Mercantile Co.	Nuts and Pecans .....	.....	2,790.00
617	Bennett, Chas. H.	Indian Pipe Stones	62.65	24.49
228	Belmont, Mrs. M.	Souvenir Bangles .....	.....	506.93
304	Brenner, H. G.	Drug Store	4,740.95	1,287.55
355	Barlow, M. V.	Glassware and Leather Goods .....	.....	600.00
382	Brady, Chas. A.	Silks and Embroideries .....	.....	720.00
542	Broadbent, Jos. W.	Public Stenography	186.97	51.82
398	Blackwell, George	Glassware and Souvenirs .....	.....	955.00
396	Benguat & Son	Benguat Museum	2,289.71	992.47
398	Brown, E. S.	Amber Goods and Pipes .....	.....	360.00
417	Baker & Sons, Ltd., Jos.	Chocolate, Cocoa, etc.	71,041.92	10,947.37
429	Boston Burnt Leather Co.	Leather and Woodwork .....	.....	400.00
442	Bonner, H.	Jewelry and Pearls .....	.....	495.00
451	Brown Tobacco Co., W. A.	Plug Tobacco	85.70	35.94
455	Barber Jewelry Co.	Jewelry .....	.....	1,265.00
459	Buzaglo, Santos	Cigars	558.80	239.15
483	Barson & Co., A. N.	Cigarettes	688.31	210.17
492	Bender, Henry	Liberty Bell Souvenirs	1,175.10	240.61
499	Berkowitz, Joseph	Engraved Glass and Metal .....	.....	700.00
506	Beraud Catering Co.	Restaurant	47,184.23	11,894.89
29	Caswell, Miss	Restaurant	84.40	18.88
477	Caswell, Miss Myra A.	Restaurant	14,488.41	3,836.78
11	Cupples Envelope Co.	Post Cards and Stationery	10,471.62	1,047.16
1	Cupples Envelope Co.	Post Cards and Stationery	95,493.46	19,601.63
61	Cupples Envelope Co.	Jewelry	8,099.02	790.68
64	Cupples Envelope Co.	Souvenir Cups	1,412.93	148.70
16	Criterion Concession Company	New York to North Pole	178,403.58	9,086.67
17	Criterion Concession Company	Galveston Flood	197,898.68	25,216.22
18	Criterion Concession Company	Battle Abbey	52,980.03	11,388.98
602	Choate & Company	Souvenirs and Novelties .....	.....	320.00
38	Cagney Brothers	Miniature R. R.	48,414.77	10,179.38
49	Cliff Dwellers Co.	Cliff Dwellers	42,791.44	16,927.02
50	Commercial Club, Birmingham	Miniature Statues	4,135.20	1,053.32
603	Cabbage, Edward V	Gold Nuggets .....	.....	40.00
8	Central Amusement Co.	Restaurant	1,057.35	258.86

LOUISIANA PURCHASE EXPOSITION

No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
8	Central Amusement Co.	Old St. Louis.....	102,873.30	28,514.73
75	Crystal Cafe Co.	Restaurant	94,349.28	28,643.98
68	Clarkson Concession	Fire Works Seats	23,614.20	4,722.84
83	Clarkson Concession Co.	Roller Chairs.....	115,280.58	23,758.32
97	Clarkson Concession Co.	Outdoor Seating.....	36,869.71	19,662.04
359	Clarkson Concession Co.	Seating at Stadium	33,766.21	22,654.14
101	Chautauqua Fruit Co.	Grape Juice	10,644.85	4,109.34
120	Craine, Dick.....	Esquimaux Village.....	44,062.70	12,806.46
151	Coven, E.R.....	Hot Roast Beef Sandwiches	142,677.60	39,764.06
183	Cairo Cigarette Co.	Cigarettes	264.05	105.39
613	Clemente & Co., A	Russian Goods		1,000.00
210	Condit, Miss Mary.....	French Novelties		320.00
221	Cohen, Anna	Novelties.....		600.00
231	Cogswell & Sandholm.....	Beauty Preparations		560.00
235	Cohen & Co., M.....	Leather Goods and Novelties.....	2,938.55	1,490.28
531	Chicago Embroidery Co.	Souvenirs.....	4,998.80	1,349.71
240	Courtney, F. G.....	Wooden Novelties	1,262.41	440.68
275	Clifford, Henry B.	Arizona Mining Camp	7,694.60	1,690.81
279	Caldwell & Wilson	Rubber Goods	844.11	945.53
525	Chamouton, Louis F. A.....	Byrrh Wine	398.25	134.98
280	Cummins, Fred'k T.....	Indian Congress & Wild West....	61,599.59	12,838.71
521	Chevis, M. E.....	Leather Goods.....		280.00
289	Conway, Nellie F.....	Infant and Doll Outfitting.....	373.25	144.71
306	Chesters, Mrs. J. A.....	Silk Illuminated Pictures.....	2,752.70	737.43
319	Clauss Shear Company	Cutlery.....	210.30	705.94
570	Cincinnati Game Company.....	Games and Amusements.....	566.60	142.19
414	Cullen, R. P	Novelties.....		5,881.47
462	Cahoone & Co., J. H.	Jewelry.....	842.46	247.85
484	Campbell & Chutjian	Candy.....	862.25	453.18
520	Chutjian, Haig P	Candy and Ice Cream.....	731.60	444.07
0	Deltering, Mrs.....	Restaurant	164.80	32.96
469	Dunnivant, John J.....	Novelties and Bric-a-brac.....		600.00
60	Dunnivant, John J.....	Hereafter	116,801.81	35,883.20
10	Dunnivant & Williams	Under and Over the Sea	86,432.88	28,991.08
46	Diamant, H. A.....	Hunting in the Ozarks	15,313.88	6,813.97
52	Deknatel & Son, J. A.	Glass Weavers.....	26,642.52	9,216.09
92	De Long & Von Boston	Root Beer	10,391.83	4,121.04
181	Dugan, Frank J.....	Leather Goods and Drawn Work .	2,416.12	856.11
182	Dancyger & Son, L.	Pin Tickets and Pins		440.00
547	Durand, David	Jewelry and Souvenirs		430.00
200	Darbec, C	Jewelry, Silk & Fancy Goods	1,112.15	608.84
267	Dewitt, Mrs. H.....	Leather Goods & Novelties		720.00
295	Daniele, L. A.....		1,384.47	692.26
310	Davey, John	Books	15.00	3.75
568	Dunne, Mrs. M. K.....	Color Outfits.....	122.70	30.78
376	Dexter, Mrs. Florence.....	Hand Painted China.....		240.00
438	Dupee, A	Visiting Cards	60.95	81.26
481	Diamant, Mrs. Freda	Novelties.....	1,285.35	362.17
501	Drake Company, The	Petrified Wood.....	338.15	284.57
518	Dugan, Frank J.....	Silk Souvenirs.....	140.50	1,052.74
526	Dewitt, Mrs. H.....	Jewelry and Leather Goods.....	842.05	754.90
1	Eisenstadt Mfg. Co.	Souvenir Spoons	2,236.09	556.41
2	Eisenstadt Mfg. Co.	Souvenir Spoons	11,026.05	1,102.60
11	Eisenstadt Mfg. Co.	Souvenir Spoons	63,586.95	17,601.89
15	Eisenstadt Mfg. Co.	Jewelry.....	16,822.46	4,312.18
4	Egypt-St. Louis Exposition Co.	Cairo	137,172.49	81,391.08
3	Egypt-St. Louis Exposition Co.	Constantinople.....	59,448.55	12,303.24
10	Eldredge & Moss.....	Souvenir Rings.....	238.00	47.60
5	Eldredge & Moss.....	Souvenir Rings.....	10,035.55	1,761.85
80	Exposition Water Company	Drinking Water	70,804.90	18,026.89
594	Engle, Miss Elizabeth	Smoker's Articles	409.75	124.22
93	Elk Mfg. & Vending Co.....	Automatic Cigar Machines.....	50.00	12.50
152	Erb, Miss Daisy.....	Leather Goods.....	751.85	1,568.01
157	Empire Souvenir Co.	Souvenirs.....	17,491.79	6,420.14
223	Ehrke, Ernest	Filigree Jewelry		360.00

No.	Concessionaire	Known As	Gross Receipts	Net Collections
235	Electric Candy Co.	Fairy Floss Candy	17,161.83	5,398.61
273	Electric Contract Co.	Electrical Novelties	2,390.12	598.71
325	Eureka Nebulizer Co.	Nebulizers	78.50	19.66
342	Economical Electric Lamp Co.	Electric Lamps	178.65	44.92
361	Eastwood, Benjamin	Silk Souvenirs	1,163.30	1,315.99
473	Essig, Frederick J.	Lapidary	254.28	99.91
477	Enloe, B. A.	Cotton Souvenirs	1,127.71	322.10
59	Folk, D.	Restaurant	90.65	20.82
70	Firmin, Michel	Restaurant	95,669.79	26,081.18
73	Fleischmann's Vienna Cafe	Restaurant	83,931.60	10,922.04
102	Fremont Grape Juice C.	Grape Juice	2,852.05	713.27
588	Fournigault, C. H.	Wooden-ware	583.70	287.04
140	Fearn Silk Company	Silk Souvenirs		1,513.06
160	Forsyth, O. W.	Certificate of Visitation	853.75	1,200.00
163	Fiorita & Company	Fresh Fruits	23,405.28	7,398.69
229	Ferris, E. B.	Art Novelties		975.00
272	Freeman, N. C.	Wood Novelties	3,186.95	1,263.07
314	Finnerty, Thomas	Breath Wafers	1,042.35	143.91
330	Freed, Katique P.	Art Novelties		1,400.00
341	Frick & Co. William	Tablets	504.40	169.72
401	Fantoni, G.	Handkerchiefs		390.00
425	Frazer, Mrs. Edith	Leather Goods	642.15	207.10
516	Foe Pan Key	Chinese Goods		490.00
520	Foster, Wilson	Novelties	365.55	119.48
18	Gitgenberg, C.	Restaurant	115.85	25.18
33	Garesche, Fred	Souvenirs	5.15	1.08
0	Grant's Log Cabin	Admissions and Lunches	129.97	39.10
577	Goggin, Ellen H.	Irish Bog Ornaments		495.00
57	German Tyrolean Alps Co.	Tyrolean Alps	1,085,004.05	85,921.26
600	Green, B. A.	Orange Punch	1,289.15	356.98
143	Garcelon, R. L.	Restaurant	78,726.65	17,704.80
145	Goldsohl, Loula B.	Imitation Diamond Jewelry	9,573.80	3,926.99
146	Gleason Grape Juice Co.	Grape Juice	1,028.30	311.19
147	Gardner, Hrs. Mary A.	Fish Scale Work	1,865.40	515.66
605	Gonzalea, M.	Pearl Shells	282.95	70.85
167	Grossman, Henry	Leather Novelties		1,620.00
170	Goodspeed Mfg. Co.	Skirt and Waist Holder		360.00
189	Groth, William	Watch Repairing		1,250.67
621	Gore, J.H.	Reed and Glass Baskets		10.00
198	Grotte, Hrs. E. J.	Laces		180.00
250	Gillette Sales Co.	Safety Razors		420.00
164	Glenn, Mrs. R. A.	Candy		1,990.00
266	Garcia, C. S.	Saddlery Leather Goods	1,677.09	453.44
269	Gerlach, A. P.	Leather Goods and Paintings		560.00
320	Goldman, J.	Glassware	14,146.95	850.00
323	Golden Chariot Company	Golden Chariots	1,654.43	7,626.99
327	Gamble, W. H.	Music Bindings	16,027.50	449.54
344	German Food Products	Pure Foods		4,177.01
555	Graves, C.H.	Stereoscopic Views	1,233.22	300.00
347	Goldberg, Louis	Belgian Post Cards		352.27
384	Glaser & Company, Chas	Burnt Leather Goods	436.50	360.00
386	Greenwald Brothers	Underskirts		165.75
387	Gonzales, M.	Costa Rican Fruits	1,233.22	509.09
559	Goldsmith, J.I.	Handkerchiefs		245.00
389	Goldman, I.S.	Camera Obscura	436.50	1,114.86
411	Gervais, C.E.	Electric Novelties	1,818.80	484.11
418	Goetghebner, Alida	Embroideries, etc.		600.00
440	George, Mrs. Mahiba	Novelties	233.20	1,120.00
476	Gomeri & Decsenyl	Fancy Goods		1,600.00
498	Goll, Mrs. Maud A.	Satin Spar Jewelry		120.00
497	Gutman, Alfred	Engraved Glassware		513.33
508	Gervais, Mrs. Ella	Electric Novelties	326.25	212.40
534	Grunebaum, Mrs. A.	Aluminum Novelties		640.00+
544	Gabech, E. M.	Novelties	106.15	133.84
550	Griffith & Griffith	Stereoscopic Views		300.00
61	Hartman, C. A.	Restaurant	452.65	92.53

LOUISIANA PURCHASE EXPOSITION

No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
578	Holland, P. E.	Cotton Souvenirs	19.05	4.77
25	Hale Fire Fighting Co.	Fire Fighting Exhibit	326,994.21	53,698.88
598	Hamilton, G. A.	East India Goods	550.30	149.91
48	Hayward, James T.	Colorado Gold Mine	8,964.09	2,253.66
68	Hagenbeck Animal Show Company	339,001.90	73,123.84	
136	House of Hoo Hoo	Restaurant	45,226.58	10,689.77
174	Heyman, S.	Pipes		480.00
178	Hall, C. F.	Electro plating		750.00
616	Hagege, Albert	Pottery		50.00
180	Hart, E. Oscar	Oscillating Jewelry		630.00
195	Hama, Jean S.	Watch Fobs and Bracelets		560.00
241	Harris, J. T.	Lithia Water	2,485.85	707.18
242	Hjoith & Co., Wm.	Wrenches and Pliers		480.00
24	Harris, Mrs. M. H.	Toilet Goods		560.00
249	Howard Hunt Pen Co.		1,441.90	404.61
324	Henckels, J. A.	Cutlery	2,874.80	1,815.30
336	Hutchinson, Miller Reese	Wireless Telephoning	564.78	57.35
337	Howard Electric Novelties	Electric Novelties	1,459.07	365.05
352	Hansen's Laboratory	Junket Tablets	2,369.70	645.79
371	Havana Commercial Co.	Cigars and Cigarettes	172.05	45.08
434	Hawes, Von Gal Co.	Hats	213.85	86.57
480	Houy, Mrs. R. R.	Souvenirs and Novelties		1,415.20
513	Hubert, A.	Hardware Utilities		195.00
517	Halbert, Edwin	Mexican Plants and Fruits	131.75	38.28
527	Hortop, Miss Bessie	Indian Goods	150.05	114.65
28	Inside Inn Company	Restaurant	1,027.05	128.38
28	Inside Inn Company	Inside Inn Hotel	1,480,743.18	254,126.39
285	Inside Inn Company	Laundry	9,713.54	1,589.22
137	Ingersoll & Bro., R. H.	Watches	26,204.55	5,619.91
141	Imperial Concession Co.	Baby incubators	181,682.95	50,603.82
207	Ingham, Miss Deed	Burnt Leather Goods		420.00
23	Irish industrial Exhibition	Irish Village	489,234.96	76,542.27
560	India Tea Association	India Tea		2,000.00
561	Irigoyen, Carlos F.	Guatemala Coffee	69.55	38.79
45	Juliusberger, Paul	Restaurant	259.70	53.94
48	Jacobson, Abe	Restaurant	145.10	31.02
374	Jacobson, Abe	Natural History Specimens	359.45	114.91
26	Jerusalem Exhibit Co.	Jerusalem	170,270.96	23,457.18
32	Japanese Concession Co.	Japanese Village	205,889.67	26,940.27
103	Japanese Bazaar Association	Japanese Bazaar	85,937.87	14,236.86
619	Japanese Exhibitors			50.00
243	Jones, Clements Catesby	Golf Scores	165.00	265.25
419	Johann, H. A.	Missouri Lead and Zinc Mines		344.87
439	Johnson, Mrs. Anna J.	Books	51.25	12.86
449	Jackson, Mrs. W. S.	Souvenirs	1,090.25	580.21
454	Johnson, Crowdin & Co.	Bannerettes	277.85	101.71
491	Jackson, Arthur C.	Restaurant	33,394.27	9,205.84
252	Judson & Co.	Violet Emblems		120.00
16	Kicker, Fred	Restaurant	1,336.20	275.24
0	Keyes & Marshall Bros	Carriages	1,256.21	814.06
82	Knox, W. M.	Orangeade	88,001.45	322.35
112	Kendrick Brothers	Granular Tobacco	381.15	129.28
590	Kandeler, F.H.	Souvenirs and Embroideries		200.00
129	Kremer Co., Victor	Novelties and Sheet Music		2,088.80
175	Klumpp, Josephine	Rosen Kuchen	11,169.90	4,555.68
187	Kells & Hopkins	Lunch Stands	28,695.54	9,816.96
245	Kraus, Mrs. L.	Novelties		320.00
597	Kester Electric Mfg. Co.	Solder	33.72	16.50
277	Kone & Pfennings	Restaurant	182,874.41	16,314.14
620	Klebe, Dr. R.	Amber Goods		250.00
203	Keller, Kent E.	Copper Goods		19.39
316	Kampfe Brothers	Safety Razors	158.75	463.58
321	King, Hugh E.	Novelties	878.37	220.68
343	Kiser, F. H.	Views	1.50	0.38
383	Kruger, H.	Woven Flowers	235.85	85.72
394	Keith, Allabaugh & Dunwoody	Crystal Cave	6,103.95	2,047.22
548	Kilburn & Davis	Stereoscopic Views		300.00

No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
553	Keystone View Co.....	Stereoscopic Views		300.00
556	Kara, Rosa	Souvenirs and Novelties		361.00
21	Leone, L. B.	Restaurant	134.10	26.82
40	Leaver, N. M.	Restaurant	100.20	22.04
52	Leslie, A. M.	Restaurant	226.15	47.23
81	Lemp, C. A.	Restaurant	7,687.00	1,924.81
81	Lemp, C. A.	Restaurant	185,305.39	46,638.44
35	Launch & Gondola Concession	Launches and Gondolas	211,309.50	81,982.79
62	Lincoln Exhibit Co.	Lincoln's Cabin.....	6,653.65	2,099.14
91	Lemonius, Mrs. Stella W.	Umbrellas and Parasols	3,508.92	891.79
123	Liquid Carbonic Co.	Soft Drinks.....	9,915.90	2,503.36
249	Leiken, Mrs. N.	Jewelry and Novelties	3,014.50	664.28
564	Lee Broom & Duster Co.	Brooms & Brushes.....	2,064.45	546.13
345	Lee, F. B.	Electric Insoles.....		300.00
351	Ladis, L.	Handkerchiefs.....	8.85	418.24
370	Lopez, Calizito.....	Cigars and Cigarettes		51.73
381	Lazarus & Schwartz	Novelties.....		2,796.00
407	Los Angeles Art Leather Co.	Art Leather Goods.....	23.30	45.61
410	Latbound & Company	Electric Novelties		50.00
453	Lightenstein, Hyman	Cigars.....	2,015.75	544.09
466	Laruelle, Victor	Embroideries, etc.....	30.83	7.72
475	Levering, Adolph B.	Souvenirs.....		840.00
210	Leemis, E. W.	Candy.....	636.20	525.96
591	Lang, Mrs J. E.	Glassware and China.....		850.00
56	Martin, A. W.	Restaurant	275.55	57.21
1424A	Morton & Brady.....	Parcel Checking.....	6.43	1.29
3	Meyer, Herman	Restaurant	3,977.40	795.50
574	Martin, R. M.	Georgia Syrup Products.....	1,015.00	332.37
44	Moorish Palace, Co.	Moorish Palace.....	30,464.30	12,678.22
65	Muir, Chas. S.	Medal Souvenirs	37,453.55	9,692.43
71	McCready, Mrs. Jas. T.	Restaurant	148,023.96	30,907.44
74	Model Poultry Farm	Poultry Farm.....	32,661.80	8,485.10
76	McMurphy, Mrs. Harriet S.	Restaurant	61,489.53	15,437.61
94	Manufacturers Novelty, Co.	Novelties.....		11,000.00
105	Miltenberger, Geo.....	Apple Cider.....	12,993.53	12,518.15
107	Malto Grapo Co.	Malto Grapo.....	4,008.95	10,225.58
111	Merrick, Chas B.	Wire Jewellery.....		500.00
144	Mannion, J. J.	Souvenirs and Novelties		4,089.37
144	Mannion, J. J.	Silks and Cocoons.....	2,103.80	506.31
128	Morton, John F.	Parcel Checking.....	18,981.26	10,216.36
150	McGee Concession Co.	Palmistry.....	19,294.05	5,798.56
153	Merrick & Co. H. H.	Souvenirs and Novelties		6,412.50
168	Mann Specialty Co.	Mann's Patent Screw Drivers		360.00
171	Michaelson, C. W.	Paper Carving.....		160.00
190	Marchetti, C.	Souvenirs and Novelties	841.55	534.00
196	McKeel, Helen J.	Transfer Liquid		210.00
217	Manheimer, Mrs. M.	Panorama Watches and Fobs		360.00
218	Maloof, Mrs. H. A.	Laces and Embroideries	1,392.80	470.83
283	McBride, R. W.	Idaho Souvenirs	1,345.80	597.10
290	Mudd, Elizabeth G.	Spinning Tops.....		50.00
300	Metzger, Mark.....	Colorado Agates.....		345.00
307	Morrison Life Belt Co.	Life Preservers.....	122.25	30.60
311	Meyer Bros. Drug Co.....	Perfumes	1,581.63	440.38
362	Mermond & Jaccard Jewelry Co.	Novelties.....		560.00
366	Machin Brothers.....	French Bakery.....	7,206.39	1,847.60
367	Mound City Concession Co.	Novelties.....	3,388.70	987.03
379	Meyer, Alex H.	Ostrich Farm	17,338.89	4,433.45
385	Moser, O.	Leather Goods and Glassware.....	1,429.60	993.39
395	Masko, Junji	Japanese Goods.....		300.00
479	Morocco Exhibit Co.	Morocco	23,360.57	10,572.56
402	Morris, Calvin S.	Confections.....	13,385.90	3,416.64
424	Minna, Mrs. S.	Novelties.....		800.00
436	Mason, Mrs. Anna	Literature.....	3.50	0.83
444	MacAnally, Mrs. Laura	Cotton Souvenirs	3.10	320.78
468	Mattar & Bro., S.	Curios and Novelties	245.83	572.23
485	Muller, Chris.....	Bark Novelties	393.25	373.26
480	Mayor, J.	Novelties.....		640.00

LOUISIANA PURCHASE EXPOSITION

No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
494	Muller, Otto	Lunches.....	23,514.45	6,201.62
512	Magill, Miss Mabel B	Souvenirs and Novelties	615.65	470.80
524	Mandill, M.	Paintings, Jewelry, etc.	192.45	98.37
635	Mitchell, Wm. I.	Pottery and Chinaware	313.40	103.92
540	Maloolf & Co., J. A.	Shirt Waists .....	.....	830.00
562	McBride & Co., A. C.	Crystal Cave	1,717.65	595.62
567	Mason Company, James S.	Shoe Polish.....	16.25	4.07
572	Mott, Kennon	Jewelry and Novelties .....	.....	480.00
17	Nathan, Barney	Lunches and Soft Drinks.....	254.40	52.87
9	Naval Exhibit Co.	Naval Exhibit.....	191,445.38	39,947.64
179	Nisslm, Mrs. J.	Novelties and Jewelry .....	.....	460.00
234	New Jersey Aluminum Co.	Aluminum Goods	442.45	316.00
261	National Ice Cartridge Co.	Flavored Ice Cartridges.....	.....	960.00
303	Norwalk Extract Co.	Bubble Guns.....	.....	650.00
392	Navajo Indian Blanket Co.	Indian Goods.....	.....	1,000.00
432	Naser, Edward N.	Canes .....	.....	250.00
447	National Creamery Association	Dairy Counter.....	6,440.10	1,650.16
458	Nevin, Mrs. Edith	Souvenirs and Novelties .....	.....	320.00
2	Official Photograph Co.	Official Photos.....	1,332.29	223.13
2	Official Photograph Co.	Official Photos.....	160,352.75	10,203.33
115	Official Photograph Co.	Slot Machines.....	31,667.75	12,064.25
59	Observation Wheel Co.	Observation Wheel.....	257,156.09	50,753.51
87	Official Catalogue Co.	Official Catalogues.....	55,588.50	18,340.21
100	Old Virginia Homestead Co.	Old Virginia Homestead.....	.....	1,600.00
104	Official Guide Co.	Guides and Maps	41,885.62	12,442.63
575	Official Guide Co.	Official Award Ribbons.....	12,218.00	4,276.80
104	Official Guide Co.	Guide Books	490.00 .....	.....
131	Olsen, Theodore Danish	Lunches.....	25,838.85	6,330.18
312	Ott, Edward C.	Scarf Pins	14.85	504.48
615	Oakman, J.C.	Vibrating Instruments	170.05	61.98
610	Outside Caterers	Reception Caterers	17,430.10	1,680.40
5	Park Boarding & Commissary Co.	Restaurant.....	71,054.49	7,105.48
57	Piehl & Co., H. G.	Restaurant	621.10	157.01
57	Piehl & Co., H. G.	Restaurant	67,582.97	18,483.83
586	Pfeifer, Fred	Shell Goods	442.55	135.73
638	Pfeifer, Fred	Sliced Fruit and Shell Goods.....	1,412.20	401.06
24	Palais du Costume Co.	Palais du Costume	71,455.05	23,117.13
55	Paris Amusement Co.	Paris	280,515.80	56,367.87
139	Park View Catering Co.	Restaurant	102,541.18	14,412.72
142	Postal News Co.	News Stands	353.38	35.31
142	Postal News Co.	News Stands	18,679.23	8,535.30
543	Puler, F. S.	Miniature Cotton Bales.....	.....	0.80
162	Parker Bros	Games.....	933.65	233.40
172	Pacific Jewelry & Curio Co.	Novelties.....	1,124.30	982.79
186	Proctor Tenerife Co.	Tenerife Lace .....	.....	1,140.00
239	Palm Flower Co.	Artificial Flowers	1,182.40	407.56
254	Palmeri, L.J.	Novelties.....	.....	640.00
268	Palma Mfg. Co.	Tenerife Lace .....	.....	560.00
271	Parker Pen Co.	Fountain Pens.....	2,539.35	632.08
328	Postum Cereal Co., Ltd.	Slot Machines.....	641.31	460.35
353	Porterfield Brothers	Turquoise Stones.....	308.35	77.34
365	Patek Novelty Mfg. Co.	Novelties.....	429.35	147.52
380	Phelps Co., The	Hi-Lo Electric Lamps	511.15	127.98
399	Porterfield Company	Turquoise Mines	538.90	141.79
403	Phelps, E. W.	Maple Sugar and Syrup	2,520.82	674.65
404	Pennington, J. H.	Banana Products.....	1,598.14	444.01
415	Platt, S. P.	Souvenir Policies.....	468.50	91.85
427	Parker, Geo. W.	Pottery	618.35	406.63
437	Parshall, C.H.	Horticulture Plates.....	771.25	233.77
443	Puretz, David	Smoker's Articles	1,099.20	329.41
450	Porter, Mrs. L. V.	Wild Flowers	8.25	10.06
457	Palmeri, Mrs. Venie	Jewelry and Souvenirs .....	.....	640.00
522	Patterson, James G.	Fruit Stands	7,065.50	2,403.14
18	Raby, Georgiana	Lunches and Soft Drinks.....	7,132.25	1,447.26
278	Raby, Georgiana	Restaurant	1,768.94	4,370.74
54	Riley, John J.	Restaurant	2.25	0.45
30	Regenburg, J.	Restaurant	41.95	8.39

THE CONCESSIONS

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No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
12	Roltair Concession Co.....	Deep Sea Divers	13,765.00	5,340.40
14	Roltair Concession Co.....	Trip to Siberia.....	85,310.30	25,292.30
34	Roltair Concession Co.....	Creation.....	347,747.20	68,473.41
22	Ralston Purina Co.....	Purina Foods	17,263.10	4,408.34
596	Roditi, Mrs. B.....	Souvenirs.....	.....	475.00
20	Robinson-Bayliss Co.....	Magic Whirlpool.....	55,718.53	16,145.78
614	Robert, M French	Candy.....	.....	25.00
40	Roger, Joseph	Swedish Souvenirs.....	.....	601.40
41	Reid, Robert A.	Sheet Music	748.00	187.00
63	Rice Association	Rice Kitchen	75,936.33	19,411.50
66	Rorer Model Dining Co.....	Restaurant	179,918.76	51,972.48
106	Rogers, Albert R	Jim Key	51,654.28	15,090.60
125	Reid, Mrs. James Allen	Restaurant	23,032.00	5,926.84
149	Re-No-May Preparation Co.....	Re-No-May Goods.....	83.40	209.71
222	Reed, Edward	Leather Goods and Jewelry.....	.....	460.00
286	Rombetis, O. G	Grecian Confections	24,450.30	8,724.69
237	Rigby, Holden & Sons	Silk Novelties	286.85	554.90
274	Riker, C. P	Natural History Specimens.....	1,741.84	488.92
358	Rider Jewelry Co.....	Jewelry.....	2,595.90	695.32
363	Rosenthal-Sloan Co.....	Flowers and Feathers	152.15	52.50
372	Richter & Co., F. A.	Anchor Blocks and Puzzles	114.55	44.16
388	Rosenberg, S. & L.	Souvenirs and Novelties .....	.....	960.00
391	Russel Mfg. Co.	Suspenders and Belt Buckles .....	.....	1,013.60
400	Roumain, Edmond .....	.....	2,292.40	599.19
420	Rauer, Adolph	Artificial Flowers	405.88	145.64
421	Roseville Pottery Co.....	Art Pottery	1,371.10	382.40
435	Rosalind Co., The	Skirt Supporters.....	.....	360.00
452	Rubals, M. K	Laces and Novelties	236.85	397.51
465	Reed, H. S.	Panama Hats	302.65	75.69
478	Roger, Joseph	Swedish Restaurant	27,228.85	7,388.76
552	Rau, Wm. H.	Stereoscopic Views .....	.....	300.00
4	Smith, M. F	Lunches and Soft Drinks	236.85	47.37
506	Starr, Frederick	Books	206.25	51.56
6	Schweickardt, Chas	Lunches and Soft Drinks	985.05	198.81
11	St. Mark's Men's Club.....	Lunches and Soft Drinks	464.25	94.85
20	Seward, W. H.	Lunches and Soft Drinks	149.10	81.82
7	Samuels, Wm. Russell.....	Restaurant	12,947.72	1,503.73
13	St. Louis Brewing Association	Restaurant	19,198.75	8,839.75
587	Sumner, C. H.....	Peanut Butter	705.11	199.87
21	Streets of Seville Co.	Streets of Seville.....	69,961.80	21,389.62
56	Saunders & Nelson.....	Views .....	.....	560.00
68	Simpson Catering Co.....	Restaurant	32,802.69	8,242.78
5	Stilwell Catering Co.....	Restaurant	1,984.40	386.88
72	Stilwell Catering Co.....	Restaurant	21,780.55	7,664.18
98	Star Bottling Co.....	Soft Drinks	80,384.23	21,389.97
509	Strother, Mrs. Wm. M.....	Candy and Novelties.....	.....	75.00
110	Shehab & Co., H. A	Novelties	2,120.37	2,627.66
159	Smith, A. W.	Leather Goods.....	.....	832.00
165	Schwartz, Mrs. Freda	Jewelry and Novelties .....	.....	610.00
169	Snyder & Co., F.....	Face Cream .....	.....	560.00
606	Sofer, Otto	Glass Novelties and Shells .....	.....	125.00
177	Schorr, A.	Pearl and Shell Goods .....	.....	1,339.74
184	Spool Bluing Co.	Spool Bluing .....	.....	480.00
188	Souvenir Statuette Co.	Statuettes .....	.....	550.00
206	Strayer, John E	World's Fair Register	23.70	5.93
609	Sitt, Ezra	Souvenirs and Novelties .....	.....	150.00
209	Saadoullah, Ousmanoff & Co.	Russian Goods .....	.....	730.00
212	Stevens, Mrs. Clara Hatch	Pyrographic Novelties .....	.....	360.00
213	Shaller, H. J.	Boot Blacking.....	1,054.80	331.78
214	Scaddlug Automatic Co.....	Automatic Toys .....	.....	380.00
611	Spits, Victor	Candy and Cakes.....	321.60	93.37
216	Savinsky, A. W.....	Band Sawed Novelties.....	384.25	412.96
226	Skirbie, L.....	Novelty Jewelry .....	.....	2,290.00
246	Shirmer, Blau & Co	Embroideries .....	.....	500.00
251	Sias, O. B.	Maple Sugar	2,820.55	758.86
259	Bittman, J.	Jewelry and Novelties .....	.....	560.00
296	Soley, Geo. B.....	Souvenir Medals	2,652.85	712.07

LOUISIANA PURCHASE EXPOSITION

No.	Concessionaire	Known As	Gross	Net
			Receipts	Collections
302	South African Boer War	Transvaal Military Spectacle....	631,776.03	112,942.88
313	Salvation Army	Books	5.85	1.47
340	Schorr, A	Shell Goods.....	2,296.95	1,074.39
346	Stewart, Walter L.....	Hand Painted Souvenirs.....	147.30	181.81
369	Sanitol Chemical Co.....	Toilet Articles	202.40	101.99
375	Spalding & Allen	Antique Furniture	1,541.50	149.93
408	Sommer, Carl	Novelties.....	1,558.40	729.58
541	Sagorsky, Joseph	Smoker's Articles	1,141.05	476.63
423	Sagorsky, Joseph	Novelties.....	.....	1,200.00
428	Smith Machine Co., H. B.	Wood Novelties	819.20	521.97
433	Smith, Mrs. F. S.	Books	21.00	5.25
441	Sasso & Ichepar	Waffles .....	.....	490.13
539	Sasso, Nissim	French Novelties	986.62	727.94
446	Schnelder, J. W.	Burros.....	943.00	397.80
460	Shadid, Michael	Souvenirs and Novelties .....	.....	485.00
401	Sampson, A.	Electrical Novelties.....	.....	160.00
471	Spitz, Victor	Austrian Wines	1,356.62	404.68
486	Sesaklan, Dr. A. H.	Armenian Goods.....	.....	300.00
493	Santa Marla, P.	Novelties.....	.....	640.00
495	St. Louis Ceramic Co.	Ceramic Ware.....	1,448.40	406.88
498	Speare, H. M.	Souvenirs and Novelties .....	.....	2,400.00
523	Simmons Fur Co.	Furs and Garments.....	2,282.95	592.49
14	Tenime, Misses	Lunches and Soft Drinks.....	290.60	60.12
503	Textile Machine Co.....	Shoe Laces	605.25	174.70
350	Tomlinson Balloon Co.....	Captive Balloons	4,013.00	1,006.47
6	Thompson, L. A.	Restaurant	1,214.05	303.52
6	Thompson, L. A.	Scenic Railway	287,343.58	79,902.79
43	Temple Inn Company	Restaurant	541.20	136.51
45	Temple Inn Company	Restaurant	51,395.39	11,252.01
134	Thompson, James A.	Old Plantation.....	27,717.24	12,729.74
320	Taylor & Son, Charles	Mechanical Bird.....	.....	1,400.00
148	Taylor & Son, Charles	Glassware.....	.....	2,912.00
156	Tuttle & Damm	Coin Rolling.....	.....	3,300.00
322	Tallewanda Springs Co.	Spring Water	3,422.60	895.81
339	Tobias, Charles C.	Furs and Novelties	470.00	345.34
357	Taylor Silk Mfg. Co.	Silk Novelties	3,204.15	1,864.44
409	Talcum Puff Co.....	Talcum Puffs.....	.....	560.00
431	Tarbell, Prank R.	Novelties.....	358.35	219.24
474	Thiebse-Steirlin Music Co.....	Sheet Music .....	.....	50.00
487	Tennessee Commission	Souvenirs.....	.....	75.00
490	Taylor, Charles	Souvenirs and Novelties	997.10	271.91
618	Tully, John J.	Nets, Hammocks and Bags .....	.....	40.00
108	University Hotel Co.	Restaurant	48,392.57	7,199.83
193	United States Button Co.....	Novelties.....	.....	500.00
260	Udor Mfg. Co.....	Skin Specific .....	.....	560.00
335	U.S. Ceramic Art Co.	Stoneware .....	.....	86.26
406	Universal Polish Co.	Jewelry Polish.....	202.10	88.93
467	Urushlyama, Shinji.	Japanese Goods.....	163.15	360.00
511	United Cigar Manufacturers	Cigars.....	.....	318.59
537	Underwood & Underwood	Stereoscopic Views	1,130.85	300.00
571	United States Card Co.....	Playing Cards .....	.....	164.87
53	Voney, Matthew	Restaurant	659.10	159.20
77	Voney, Matthew	Restaurant	786.00	17,071.74
532	Vivola, Rudolph	Italian Goods.....	65,144.36	415.63
584	Vandersteen, J.	Dutch Tiles.....	1,194.45	200.00
601	Vanglaere, J. B.	Pottery and Souvenirs .....	.....	20.00
554	White, H. C., Co.	Stereoscopic Views .....	.....	300.00
39	Wright, G. C.	Restaurant	89.55	17.91
44	Wentz, George	Restaurant	194.30	40.86
0	Wachtel, Linick	Restaurant	28.70	7.18
6	Williams, Miss Grace	Restaurant	1,157.31	182.43
27	World's Fair Auto Co.	Automobile Rides	16,857.25 .....	.....
27	World's Fair Auto Co.	Automobile Rides	175,119.70	29,087.06
0	World's Fair Souvenir Co.	Souvenirs.....	2,198.68	535.39
96	World's Fair Souvenir Co.	Souvenirs.....	43,267.58	10,862.04
30	Weller, S. A.	Pottery	9,172.35	2,600.60
43	World's Fair Lunch Co.	Dairy Lunches	32,085.46	8,606.56

THE CONCESSIONS

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No.	Concessionaire	Known As	Receipts	Gross Collections.	Net
89	Watling Mfg. Co.	Weighing Machines	2,063.61	2,500.00	
113	Winget Mfg. Co.	Cigars	3,242.35	810.76	
127	Watson, A. E.	Austrian Goods		300.00	
132	Willard, H.	Card Printing	2,447.85	856.51	
558	Webber, Chas. F.	Restaurant	4,228.95	1,098.17	
161	Welch Grape Juice Co	Grape Juice	20,856.10	9,002.73	
219	Willard, W. H.	Smoker's Articles	641.65	324.50	
247	Whiteley Exerciser Co.	Whiteley Exerciser	34.35	24.08	
256	Walter, C.	Horn Goods	586.75	333.86	
565	Willard, Helen	Souvenirs and Novelties	1,819.75	1,175.29	
265	Weis, John C.	Fraternal Pocket Pieces		420.00	
16	Whorley, Mrs. F. C.	Lunches and Soft Drinks	85.90	19.16	
276	Whorley, F. C.	Cigars	12,191.14	2,756.74	
538	Whorley, F. C.	Souvenirs	267.75	92.04	
281	World's Fair Sanitary Co.	Toilet Rooms	57,486.10	43,159.29	
301	World's Fair Program Co.	Official Dally Programs	22,864.50	13,360.51	
338	Western Advertising Co.	Car Advertising	4,855.11	1,930.71	
416	Wayne Knitting Mills Co.	Hosiery	3,959.95	990.17	
422	Wortham, Louis J.	Texas Souvenirs	863.10	254.07	
551	Wasson, C.	Stereoscopic Views		300.00	
426	Waldon Knife Co.	Cutlery	667.70	786.06	
463	Waterman & Company	Fountain Pens		500.00	
502	Werner & Betzln	Self Lighting Canopy	20.15	8.78	
509	Walker, Mrs. James F	Souvenirs	613.34	190.60	
546	West Disinfecting Co.	Disinfectant Appliances	12.45	8.12	
573	Whiting View Co.	Stereoscopic Views		300.00	
282	World's Fair Janitoring Co.	Janitoring and Cleaning	5,332.37	390.24	
99	Wireless Tower Co.	Wireless Telegraph Tower	26,536.74		
30	Yee Ging Co.	Chinese Village	76,281.11	24,984.48	
88	Yamaguchi, Tetsunosuki	Japanese Tea House	21,943.40	5,579.12	
192	Zihlbauer, M.F.	Wood Novelties	637.75	474.97	
579	Zerbe, Farran	Wood Post Cards		500.00	
580	Zimmerman, Mrs. I. R	Views		35.00	
			13,282,991.87	3,081,393.15	

Summary by Periods:

Pre-Exposition Period	\$32,243.06
Exposition Period	3,047,178.09
Post-Exposition Period	1,972.00
	<u>\$ 3,081,393.15</u>

The net collections realized by the Exposition Company as shown in the foregoing statement included percentage, space rental and sale privilege.

The chief of the department of concessions, John A. Wakefield, commenting upon the results, says:

The Jerusalem exhibit company's concession was peculiar in this respect: the accounting company's record of the transactions discloses the receipts from admissions to the concessions only. By agreement between the exposition authorities and the Jerusalem exhibit company, the concessions operations within the latter's space, owing to their very peculiar character, were to be controlled and accounted by the concessionaire, and the result of such control and accounting was to be communicated to the department at the close of the Exposition. This statement has not been received up to the time of making this report. It is entirely probable that the gross receipts of concessions operated within the Jerusalem exhibit company's concession during the period of the Exposition amounted to \$300,000.00.

The Philippine reservation was under direct and immediate control of the Philippine commission; and by arrangement between the Philippine commission and the exposition management, it was agreed that the Philippine commission should have the privilege of

granting the concessions to be operated within their reservation of 51½ acres of the exposition grounds without payment of any portion of revenue to the exposition treasury. A large number of concessions were operated within this reservation. The gross receipts are reported to have been approximately \$660,000.00.

Much concessions revenue was lost to the Exposition through the rights and privileges claimed by exhibitors from foreign countries and by those occupying portions of space allotted to foreign countries for exhibit purposes only. The rule of the Division of Exhibits read:

Rule 29-Sale of Exhibit-Exhibits may be sold to be delivered at the close of the Exposition. Orders may be taken to be filled from a stock of similar articles outside the exposition grounds. If exhibitors wish to sell from their spaces during the exposition period arrangements to that effect must first be made, approved by the chief of the department, with the director of exhibits and the director of concessions.

This rule was held by many of the foreign commissioners to constitute a right to sell their goods, wares and merchandise, or duplicates of same, without the payment of tribute to the Exposition unless they especially agreed to make payment of some portion of their gross receipts in recognition of the privilege of sale granted to them. As they refused to make any such arrangement, they maintained that they could not be held to the payment of any portion of their receipts to the concessions department. The foreign commissioners formed an organization representing more than 800 exhibitors. The negotiations between the foreign commissioners' association and the exposition authorities, with the attending and consequent delays, prevented this department from securing from the foreign exhibitors selling goods, wares and merchandise, any portion of their receipts as a recompense for official and authoritative permission for such sales. If the figures of the president of the foreign commissioners association are taken as a basis for the estimate, there were about 800 foreign exhibitors selling an average of \$1,260.00 of goods, wares and merchandise, making a total of \$1,000,000.00 of sales not included in the gross sales by concessionaires as shown in the accounting company's report.

The receipts from sales of goods and articles on the exposition grounds, including those that paid and those that did not pay regular revenue to the Exposition may be summarized as follows:

Gross receipts of concessionaires as per accounting company's report	\$13,039,888.00
Estimated receipts from concessions within Jerusalem exhibit company.....	300,000.00
Gross receipts from concessions within Philippine reservation.....	650,000.00
Gross receipts from unauthorized sales by foreign exhibitors.....	<u>1,000,000.00</u>
Total	\$14,889,888.85

The revenue to the Exposition if the gross receipts from concessions within Jerusalem and the Philippine reservation and from the foreign exhibitors had contributed the regular tribute would have been increased by the amount of 25% of their gross receipts, or \$462,500.00, and the concessions revenue would have been as follows:

Concessions revenue as per accounting company's report	\$3,703,959.30
Concessions revenue from concessions and sales not included in accounting company's report.....	<u>462,500.00</u>
	\$4,166,459.30

Thus, the concessions revenue would have been greater than the concessions revenue to any other exposition ever held, irrespective of paid attendance or total admissions.

CHAPTER II

CONSTRUCTION OF CONCESSIONS

Careful Supervision—Provisions Against Fire—Safety of the Public Assured—How Concession Preparations Were Expedited—Sanitary Regulations—Health of the Exposition City—Free Admission of Children—Secret Service—The More Notable Amusements

DIRECTOR of Concessions and Admissions Norris B. Gregg in his report says of the results of the careful supervision exercised over construction of concessions:

No accident due to defective construction occurred during the entire period of the Exposition. Not a grandstand or platform collapsed. Exits proved adequate on all occasions. The floors of the amusement halls withstood the weight of the heaviest patronage. Even down to the entry ways the Pike as a whole and in detail was planned and built for the safety and convenient movement of the largest crowd. The results were freedom from panics and absence of uncomfortable congestion. Much thought was bestowed upon the width of the promenade, which was sixty feet, paved with brick and well lighted. Besides the principal entrances east and west there were cross passages sufficient in number and width to accommodate those who wished to enter or leave without going to the ends of the three-quarters of a mile thoroughfare.

While the construction was in progress the director personally and through his engineer and assistants exercised close supervision over the progress of the work and saw that the building rules of the Division of Works and of the Division of Concessions and Admissions were carried out to the strict letter. Sometimes concessionaires protested and complained that the restrictions were too severe. Nevertheless, the rules were enforced. During the Exposition a number of incipient fires occurred on the Pike, but not one time did serious damage occur. This immunity was due to the rigid care exercised in the light, temporary construction as well as to the provisions for firefighting.

While all construction on the grounds came under the direction of the Division of Works and was conducted in accordance with rules promulgated by the director of works, the Division of Concessions and Admissions exercised, without conflicting with the rules of the Division of Works, supervision of the concessions. Director of Concessions Gregg had his own engineer, Mr. Tyrell, to observe especially the character of the construction with a view to the protection and safety of the public.

Rules of Safety:

On the recommendation of the director of concessions and admissions and the Committee on Concessions, with the approval of the Division of Works, were adopted certain regulations having in view protection against fire. These rules contained the following provisions:

In each concession are to be large standpipes that have the high-water pressure and

are distinct from the service pressure. Hose with nozzle is attached on each floor and several of these are in each building. The standpipes extend above the roofs with connections there also. In addition, there are a large number of extinguishers of various makes. In the concessionaires' buildings, within the three-hundred-foot line (on the south side of the Pike) of the Varied industries and Transportation buildings, all of the exterior walls of the buildings or structures must be covered on the face with sheet metal, expanded metal, or other metallic lathing, and must be thoroughly plastered with a coat of fireproof plastering, or plaster slabs must be used. The walls must be extended as fire walls at least two feet above the roof covering, a coping of the same construction to be carried over the tops of the plates or studs, and all interior visible surfaces of the construction and framework of such walls must be thoroughly covered with a coat of fire-resisting, adhesive material.

Partitions or subdivisions in all such structures must be built in the same manner as the exterior walls. All ceilings must be of metal lath and plaster. Brick or hollow tile for fireproof separation of the several places in each construction is required at frequent intervals as the character of the structure will permit. Where it is necessary to use wood floors the exterior walls of the buildings must be carried to the earth, effectually closing up the space at the edge of the building between the door and the earth. Buildings and structures must be separated by a space of at least fifteen feet. Roofs or all structures must be of metal, asbestos, tile, or non-combustible material. All bunting, trimming and cloth decorations of any kind must be chemically treated to insure against rapid combustion.

No Serious Fire:

It is gratifying to state that the fire loss in concessions did not amount to fifty dollars. While there were fires or rather fire alarms or calls, yet so well did the fire provisions of the Committee on Concessions and the director of the division cover the situation that no damage resulted.

The supervision exercised through Engineer Tyrell and other representatives of Director Gregg over all concession construction accomplished something more than safety from fire and accident. It enabled the director to keep in close touch with the progress or the lack of progress. From day to day the director was informed regularly as to the numbers of men employed on the several concessions. If work ceased, if a falling off appeared, if the labor was not sufficient, the remedy was applied before midday. It was the custom of the director to call up by phone in the morning such concessionaires as in his judgment based upon the reports made to him were not proceeding as rapidly and as energetically as they should in their preparations. No other Exposition had concessions so well advanced on the opening day, a fact accounted for in the main by the close relations maintained between the officials of the division and the concessionaires. Two months before the Exposition opened the Get Ready Club of the concessionaires was organized with the result that the earliest visitors had no occasion to complain that there was not enough to see and hear on the Pike.

To rigid inspection and to strict enforcement of regulations was due the maintenance of good sanitary conditions on the Pike. The excellent service of the Medical Department, under the director, Dr. L. H. Laidley, cannot be too highly commended. It is to be remembered that the Pike was the great thoroughfare of a community of several thousand persons whose nights as well as days were passed in the concession buildings. For the first time in exposition history a very large resident population, from 15,000 to 20,000 persons, lived continuously upon the grounds. These were people of all climes and of varying

degrees of civilization from savage to enlightened. Yet so efficient was the suppression, so thorough were the precautions that no contagious disease gained a foothold. Indeed, the general healthfulness of this city of Exposition dwellers was a matter of gratifying surprise.

Free Admission of Children:

Director of Concessions and Admissions Gregg believes that the free admission of children upon certain days was beneficial to the Exposition from a financial point of view. In his report he included the following interesting statement:

The free admission of children upon certain days was prompted by a liberal policy and a praiseworthy desire on the part of the exposition management to extend the educational advantages. It entailed upon the admissions department increased responsibility. A careful study of results led to the conclusion by the admissions officials that this policy was wise from a business point of view as well as commendable from an educational standpoint. The admission figures compared day by day demonstrated that the free admission of children stimulated appreciably the attendance of adults who paid. Further than this the presence of large numbers of children on the grounds with their bright eager faces everywhere stimulated the general interest and enthusiasm. Concessionaires were quick to recognize this. They vied with each other for the patronage of the children. A concession into which the little ones trooped for nothing or for nominal charge received the benefit of a boom with the elders. Children's days were good days on the Pike.

The free admission rule for children on certain days was limited to the hours preceding one o'clock in the afternoon. Such days brought a rush during the morning hours. The system required that free admissions should be through stiles set apart. This made it necessary for children to enter at gates some little distance from those through which their parents passed. Often a grown person would have charge of half a dozen children. Well considered plans and clear-headed work by the admissions force brought chaperons and the children together just inside of the gates so that there was no confusion, no lost and crying children even in the greatest pressure for admission.

Incidents in connection with these free days for children will not be forgotten soon by those who witnessed them. On one day the anticipated rush just before the limit of time, one o'clock in the afternoon, did not occur. To the surprise of the admissions force the Lindell entrance was practically deserted during nearly an hour previous to one o'clock. Then came a crowd of hundreds all at once. The cars had been blocked somewhere downtown and in a long string delivered their loads at DeBaliviere avenue. The anxiety and doubt expressed upon the faces of those little ones as they swarmed in front of the gates, knowing they were behind time, was irresistible. The gatekeepers looked at the director appealingly. We all knew it was past one o'clock. There was nothing to do but to "prove the rule by an exception," and a word to the gatekeepers from the director who fortunately happened to be present set the free stiles in rapid operation and the children went through them chorusing their delight.

Aside from the regular field and office forces, the bureau had the benefit of the reports of secret service agents, both oral and written. The extent to which secret service agents were engaged was unknown to the chief accountant. They were directly employed by the director of concessions and admissions and were of both professional and non-professional character. Some were assigned to work under the direction of the chief accountant and chief inspector; others reported to the director of the division only. While the chief accountant received many reports through the director's office, he was frequently unadvised as to the source of the information. During the greater part of the exposition period, secret service agents were assigned to duty as gatemen and restaurant checkers, to ascertain what

concessionaires could be approached with intent to defraud and to discover who among the bureau's own employees were untrustworthy, thus, to be able to anticipate collusion and fraud. From these secret service agents daily reports were received telling of the misuse or non-use of cash registers or other accounting devices. The first offense was followed up by the chief inspector with a letter to the concessionaire which recited the particulars and stated that a second report of like character would be followed by the placing of the Exposition's cashier at the station without further notice and at the expense of the concessionaire. This had a very remarkable effect in many instances and as the practice became generally known it undoubtedly tended to deter dishonesty in such concessionaires as were so inclined. While the expense of maintaining the secret service force was large the director believes it was money well expended and that it saved the Exposition Company many times its cost, not only in the discovery and stoppage of actual leaks but especially as a moral factor in preventing dishonesty.

The More Notable Amusements:

The following is a concise description of the most important amusement concessions which were granted the right to operate upon the exposition grounds by the Committee on Concessions, as recommended by Director Gregg:

The Pike was a living color page of the world, and pictures speak louder than words. Some of the entertainments found there have been presented at other expositions but not so elaborately as they were projected at St. Louis. The great majority were entirely new and for the most part entered into fields which have not heretofore suggested the possibility of amusement.

Because the Pike sought to elevate the dominion of entertainment it lost none of the spice or that exhilarating feeling which the public has come to expect in this feature of an exposition. On the contrary the color was heightened, and the excitement increased in harmony with the broader scope. Advances in the theory of presenting such attractions made the scientific, mechanical and spectacular features far superior to those of preceding expositions. The number of open-air spectacles exceeded anything of that class hitherto attempted not only in the area covered but in the development of detail and fidelity to the thing that was imitated.

Snow-capped masses of the Ortler with the wild and jagged Zugspitze threw their cooling shadows over a verdant scene of Alpine life at the extreme eastern end of the Pike. Massive castles with gray towers and embattled walls; tiny houses, with arbors, gables and towerlets; a Tyrolese council hall with its verandas and terraces-these sights received a deeper tone color from groups of peasants singing "Zillerthat, Thou Art My Joy," as they went about their peasant tasks. In a mammoth cyclorama hidden beneath the mountain masses a remarkable trip was taken by tram car through Alpine scenery painted by Professor Josef Rummeispacher.

Rivaling the hugeness of the Alpine show and lying next to it as the Pike extended westward, the Irish Village stretched six hundred feet north and south. Gothic grandeur was conspicuous in the old Irish house of parliament which served as a cafe. St. Lawrence's Gate at Drogheda, one of the most celebrated landmarks in Ireland, was the main entrance to the show. Carmac's Chapel on the rocks of Cashel and an Irish arch nine hundred and two years old were other objects of interest. The renowned Blarney Castle became a theater in which a company of Dublin players gave some of the most typical plays of true Celtic spirit. The great Dublin army band of sixty pieces played in the village. A dignified interest was given to the Irish Village by an arrangement with manufacturers in the principal Irish cities which made the display a vehicle for an Irish national exhibit. The linens, laces and carpets of Ireland were displayed. The immemorial beauty of the Irish women was shown in a gallery of famous Celtic beauties who have left their imprint upon the pages of history and story.

A Notable Illusion:

One of the principal illusions on the Pike was directly opposite Asia. It varied the entertainment of the spectator. The showman called it "Under and Over the Sea," a mechanical, scenic, and electrical illusion which imparted the sensation of a trip in a submarine boat to Paris and return to the exposition city by airship. The submarine boat rested in a miniature harbor of real water on the edge of the Pike, in plain view of the passing crowds. Two hundred and fifty passengers could be accommodated every voyage. Descending through the open hatchways passengers disappeared from those who were looking on. The hatches were battened down; the boat sank beneath the water, and the voyage was under way.

More than usual interest attached itself to the Streets of Seville because the display was planned by Mrs. Hattie McCall Travis, the only show woman who ever received a concession on an exposition amusement street. Her untiring energy caused her death before her dream was realized. Spanish life and manners were illustrated with such delicate color schemes as only a woman's taste could have suggested. One entered this atmosphere through the Plaza de Toros of Madrid to find himself in Seville during the fiesta on the Corso.

The kingdom of the beast is one of the constant delights of mankind. In the world's history no such assembly of the brute creation as the Hagenbeck Animal Paradise had ever been seen. The days of the Roman arena were tame in comparison with this amusement. Every zone contributed its beasts to an immense open-air panorama in which wild and domesticated animals roamed at large without so much as a mosquito netting between them and the spectators. Those either subjugated by man or friendly to him grazed in a wide, mimic meadowland rising gently from the edge of the promenade. As the topography of the panorama receded its vegetation changed to equatorial growth. Wild beasts at perfect liberty were seen in this middle foreground. Further away mountains began their steep ascent. Animals of these climes appeared in the higher environments. Nearer the skyline of glacier and snowy peak the furry denizens of the Arctic regions completed the Adamless Eden. The whole effect was produced with entire safety to the public by the introduction of the patent invisible device crossing the panorama between the wild and the domestic animals.

A different atmosphere was breathed in Mysterious Asia. The noble dome and minarets and the ceramic facade of the Taj Mahal, that gem of Indian architecture at Agra, dominated a blending of Hindostan, Ceylon, Persia and Burma. The Rain Sipri at Almiabad and the Kutch Minar of Delhi lent their historic beauty to the environments. Leaving these structures, a street in Calcutta showed the varied fronts of bungalows and other native buildings resplendent with elegant grille work, mosaic and ceramic panels carved with inlaid wood. Bazaars and shops on this street throbbed with merchants and manufacturers plying their trades of wood carving, ivory carving and pottery making. Gold brocade weavers, Benares brass makers, Lascar wood artiste and jewelers plied their wares as they labored. Curious Indian carts from the country districts were drawn by oxen. Elephants and dromedaries went about their burdensome tasks. Other crowded thoroughfares led one into a scene of Ceylon, the land of tea and gems. In tea houses the Singhalese dried and rolled the fragrant leaf which makes the cup that cheers. Burma, the land of the white elephant, was represented by a native village of strange huts and lookouts constructed of straw, bamboo and tropical leaves. Old relics of the golden temples of Rangoon were quite as curious as the idolatrous inhabitants. Burmese musicians sounded strange-toned instruments; Burmese maidens swayed to the seductive movement of the dance. A marketplace in Teheran showed the visitors Persia, the most famous rug market in the world. A caravansary of Persian Kajavaks, conveyances drawn by dromedaries, sedan chairs and donkeys enlivened the pictures. Persian traders and manufacturers in queer costumes plied the loom to illustrate the art of weaving their luxurious rugs. Brass chisellers, candy makers, fortune tellers and fakirs swarmed about the coffee house where the visitor supped nectar and viewed the scene. Open air features of the combined display showed a rajah festival with gaily caparisoned elephants driven by coolies in snowy garments, and carved cars holding members of

the court were drawn by richly decorated oxen. A Brahma festival the wedding procession and the dadera or annual sacrificial feast of India were other interesting features. In an Asiatic theater performers of these several countries displayed the Devil dance, the Nautch dance, the Jar and Castanet dances and other national amusements.

The sportsman who stepped out of the busy Pike into a forest of natural landscape with his senses quickened for the starting of game needed his best marksmanship. He found himself in a natural reproduction of a most picturesque scene on the Frisco Railway in the Ozark Mountains. There a plentiful supply of game in constant movement seemed anxious to be knocked over although apparently conscious that by the aid of some curious and ingenious contrivance they would soon be on their legs again, inviting sportsmen to try another shot.

Japan on the Pike:

A picture of real Japan was seen on the Pike. Fragile bits of landscaping were taken from the imperial gardens of the Mikado. Very old trees transplanted from Japan to the Exposition had been trained by the gardener to twist grotesquely into shapes of man and beast. The flowers of the island Kingdom were seen growing in these stretches of nature. Lagoons meandered through the scene; cascades leapt over rocks; ancient historic bridges and lanterns spanned the water, and ornamental and practical boats imported from Japan plied the water courses. The architecture was distinctly Japanese, done by native carpenters who built without the use of a nail. The main entrance to Japan was an imitation of the exquisite gateway to the Bio of Ieysau at Nikko, known as Yoney Mon. This gigantic gateway rose one hundred feet above the Pike. The original was built three centuries ago by Ienitsu, third ruler of Japan, as a gateway to the mortuary chapel of Ieyasen, his grandfather at Nikko, the mecca of art in Japan. Hence the Japanese proverb, "Until you have seen Nikko you must not say Kekko" {beautiful}. It was decorated with gold and lacquer and the exquisite hand carvings were the work of the most famous artists of the period. The original could not be duplicated now in the same materials for millions of dollars. A replica of the gateway to the Temple of Nio Mon three centuries old had been brought from Japan to become a feature of the display. It was embellished with original gold lacquer, inlaid silver, and wood carvings. The structure was valued at \$100,000. A Japanese military band supplied entertainment with strange music. Jinrikishas ran about, drawn by natives in harness and furnished novel transportation.

The Moorish Palace was an historical wax work exhibition of the manners and customs of the East Indian races, in which the racial characteristics, the dress and industries and diversions of these peoples were illustrated by models of very superior workmanship. Conspicuous features of this same display were groups reflecting certain important events in the acquisition of the Louisiana Territory. Some of the groups showed for instance the discovery of the Mississippi and the burial of DeSoto in the Father of Waters, the scene of the transfer of the Louisiana domain to American sovereignty as it was enacted at St. Louis, and events connected with the famous exploration by the pathfinders, Lewis and Clark.

Weaving of glass into tablecloths, fancy embroidery, napkins, handkerchiefs, neckties and gowns, all pliable as ordinary fabrics, were astonishing things done before the eyes of the spectators by wizards of the Glass Weaving Palace. This was one of the industrial exhibit concessions of much interest. Glass weaving is not a common industry and the visitor witnessed an art not so well known but of a most unique and novel industry prevailing in many provinces in Europe.

A vision of two worlds was beheld in the splendid reproduction of Hereafter.

There was an Old St. Louis. It was revived by an historical reproduction on a small scale of the village of St. Louis, taken from original prints and plans now in existence.

Paris on the Pike was a sparkling composite of the brilliant life and tone of the gay French capital.

The Six Days:

A vast blue dome one hundred and twenty-five feet high held the eye. Creation was the attractive title of the amusement. The visitor glided backwards through twenty centuries in a grotesque craft along a water canal encircling the dome for a distance of one thousand feet. A moving panorama of the centuries in plastic and real life was passed en-route to the master mechanical denouement. At the first century passengers left the boats and entered a temple of that period. Soft music from unseen performers preceded a peal of thunder. The walls of the temple melted away and a feeling of vast void surrounded the Piker. It was chaos. The spectator was in the midst of the dome and completely enveloped in a cloud wrack. A loud voice uttered the words, "The Lord made the heavens and the earth in six days!" Intense darkness surrounded the waiting audience. The voice continued the story of the creation. "Let there be light!" was obeyed as the soft glow of dawn pervaded the hollow dome. It increased until the glare of the day revealed the void of cloud about the spectator. The light faded into evening of the first day. "Let there be a firmament!" proclaimed the voice. It appeared, separating from the waters. "Let the dry land appear!" The limitless ocean rolled back revealing the land. Trees, flowers and shrubs gradually resolved themselves into the Garden of Eden. "And the Lord made two great lights." The sun and moon came forth making a day and a night effect. "Let the waters bring forth living creatures!" Fantastic shapes moved through the waters while birds were seen and heard overhead. Reptiles and beasts of long ago crept and walked through the forest. "Let us make man after our image!" said the voice. A spectral form of Adam seen approaching from the invisible reached the foreground in full light. Adam and Eve discovered one another, and the story of the creation was complete.

The Palais du Costume was one of the amusement sensations of the Paris Exposition. The entire show was transported to St. Louis, with its costumes which had a valuation of several hundred thousand dollars.

Fifty-one different tribes of North American Indians formed the great assembly of savages shown in the Wild West Indian Congress and Rough Riders of the World.

A Trans-Siberian Railway journey in a real train of coaches drawn by a real locomotive and including a modern car service was one of the most original features on the Pike. Five different running scenes at varying distances from the windows of the trains, each one of these scenes moving at different rates of speed, accentuated the illusion, being scientifically and artistically arranged as to perspective and light. The beauty of Siberian scenery known only to few American travelers was rapidly unfolded as mile after mile of the running drops were passed at high speed.

Chicken hatching by incubator was known in the time of Rameses but it has taken centuries to apply the same methods to the raising of babies. In a high ceiling observatory flooded with light twenty-four incubators with glass doors contained the fledglings who were to be trained in the first voluntary movements of actual life through all the intermediate stages up to fully developed babyhood. Every two hours, the more advanced infants were hastily taken from their warm nests, in a heated blanket, and fed by the nurses, in full view of the public. Unless the baby was doing "poorly" it was unswathed each morning from its soft cotton bandages and dusted with a delicate preparation of rice powder. The mites were rarely promoted to the dignity of taking milk from a bottle until they had been in the incubator forty days. After one- or two-months' residence within the incubator walls there came a suggestion of color into the wee cheeks, of intelligence into the eyes, and the little waif of babyland had become something to pet and coo over as well as a unique testimony of the power of modern science. The baby incubator was a nearly square box of sliver metal placed about three feet from the floor on four supports. It was airtight except for the ventilating pipe which sent into the box a constant stream of filtered air fresh from the outside. The proper temperature had been maintained by the air passing over hot water pipes placed in the floor of the cage. An exhaust pipe carried away the impure air. A wheel

revolving quickly on the inside of the incubator, according to the air exhausted by the tiny lungs, became an indicator of the rapidity of the oxygen being consumed in the nest by its occupant. Suitable apartments were arranged in other parts of the building for the exhibition of unoccupied incubators, where they could be examined in detail by the visitors.

Cairo and Constantinople:

Cairo recalled the greatest amusement success at the Chicago Midway for it was reproduced in St. Louis by the originator, but on such an elaborate scale that the Chicago show was easily eclipsed. Cairo was a combination of twenty-six distinct Egyptian buildings of the purest Arabic architecture. Nearly sixty-seven booths and many stands along and, in the streets, held the wares and manufactures of Egypt. These products were sold by natives. Camels, donkeys, monkeys, and snakes formed a part of the street life of the curious city.

Constantinople on the Pike was operated by the same company which reproduced Cairo. It introduced a new form of attraction in a faithful reproduction of the bazaars of Stamboul. The architectural sketches of the bazaars were drawn by Djelal Bey Ben Essad, one of the best art critics in Turkey, aide-de-camp to the sultan and son of the late Marshal Essad Pasha. The bazaars of Stamboul took in the whole quarter of Constantinople along the heights lying between the Golden Horn and the Sea of Marmara in the vicinity of the old forum of Theodosius. The bazaars were a labyrinth of narrow streets all under covered arcades supported by columns of different shapes. The buildings had a ground floor and very few had a second story. It is estimated that the bazaars contained over three thousand stores. Eleven sections of the bazaars were reproduced at St. Louis, and the gate selected as the entrance was that of the mosque of Nouri Osmanieh. It led to a replica of Kalpakdjliar djadessi or avenue running in a straight line from east to west to the extremity of the bazaars. A typical Turkish street was shown outside of the bazaars. Each street bore its proper relation to the other streets and the minutest details of the architecture were imitated. Notwithstanding the shortening of the streets to meet the requirements of the allotted space the difficulty of preserving perspective effects was accomplished to an astonishing degree. The bazaars were filled with Turkish merchants and their wares and illustrated the street life in that section of Constantinople.

The Chinese Village was an attraction provided by an association of Chinese merchants of Philadelphia. It consisted of a Chinese theater, with native players; a "joss" house with a guide to explain the significance of the religious rites and symbols; a tea house with native waiters, and an extensive bazaar with a population of native merchants, mechanics, painters, and decorators working with their fingers as they have done from time immemorial in the Celestial empire.

The Esquimaux was seen in his environment of polar landscapes, living in huts of reindeer skin, about a great lake of real water on which the native canoes darted, plied by long handled oars.

The Wonderful Whirlpool:

Then the Magic Whirlpool claimed the attention. An idea of the immensity of this mechanical wonder grows with the statement that fifty thousand gallons of water were in circulation every minute. The great cascades of the Exposition, including three waterfalls, used ninety thousand gallons per minute. Near the entrance, within the building of the Magic Whirlpool, was a circular cascade eighty feet in diameter, with a fall of nearly thirty feet. From its base, within the center of the circle, sprang an electric fountain of crystal water, rising like a moving prism for sixty feet. The enchanted lake lay sixty-three feet above the floor. Around the palm-fringed borders circled birds of paradise. Ascent to the enchanted lake was had by boats which glided around the surface of the lake, and then, sweeping over the circular waterfall, swung six times around its circuit beneath the de-

scending waters. The boat glided toward the base of the enchanted lake, then shot into a submarine channel, passed a tropical garden filled with feathered songsters and back again to another dark, underground channel. It floated around the base of the mount on which rested the enchanted lake and gliding under and through the curtain of descending waters moved gracefully twice around the base of the electric fountain. Again, making a circuit of the enchanted lake it found its exit. The entire course through which the boat carried its passengers was over five hundred feet of land. The submarine way traversed by the craft was filled with curious illusions, notably the great spotted rat vibrant with the motion of a living monster.

In the Cliff Dwellers were reproduced the most famous caves of the stone age as the remains exist today in the canyons of Arizona, New Mexico, and Colorado. An added ethnological interest was found in a large pueblo of Zuni and Moki Indians whom science classes as the descendants of the ancient race of kings. These Indians had never been shown in any wild west display or in any exposition. A cliff dwelling exhibit was one of the interesting things on the Chicago Midway, but no living types were with the attraction.

The marine theater for the Naval Exhibition was a basin of water three hundred by one hundred and eighty feet with a perspective of natural and plastic scenery representing a fortified city. A fleet of eight battleships, six cruisers, six torpedo boats, and one submarine boat were employed on the water surface. The craft were exact copies in miniature of famous men-of-war in the United States navy. The vessels were twenty-one feet long and were operated by electric motors in the hulls. A sailor seated in each vessel, but invisible to the spectator, controlled the maneuvers.

Beautiful Jim Key, the equine millionaire and the most wonderfully educated horse in the world, fascinated his audiences by marvelous feats in mathematics and business system. Jim also conducted a school. He picked out any letter, playing card or number that was called for. He could add, multiply, divide and subtract in any numbers below thirty. He spelled any ordinary name asked him. He could read and write. He went to the post office, got the mail from any box requested and filed the letter in the regular file, under any name asked him. Jim had no difficulty in distinguishing various pieces of money, and he would go to the cash register on request, ring up any amount and bring the correct change. He could distinguish colors and flags and readily told the time of day. If asked for quotations from the Bible where the horse is mentioned, he would give you the chapter and verse. He was thoroughly up with the modern procession for he used the telephone. But these are not the most wonderful things performed by this horse with a human brain. He took a silver dollar from the bottom of a glass jar filled with water, without drawing a breath or drinking a drop. This is considered one of the greatest feats ever performed by an animal. Jim Key was the only brute honorary of the American humane society. He was valued at one hundred thousand dollars; he traveled in his own private car with his valet as his bedfellow. This remarkable horse was a purely bred Hambletonian.

Antebellum days of the Southland were revived in the Old Plantation which reproduced the actual olden life of the American Negro and the charm of the southern plantation home as it existed before the civil war.

Battle Cycloramas:

The battle history of the American republic was the theme of the Battle Abbey, an enormous cyclorama near the western edge of the Pike. The huge building was designed in medieval architecture with stately towers, bastions and embattlements. A portcullis and drawbridge and a parapet, bristling with cannon, completed its very formidable appearance. Mammoth plastic representations of the battles of Manassas and Gettysburg were typical of the successes of both the Federal and Confederate armies. Between these two great spectacles was a vivid portrayal of the most memorable fight between the white and red races—the Custer massacre. What were known as the Great Halls of Battle contained

cycloramas of the battles of Yorktown, representing the revolutionary period; New Orleans, that of the war of 1812; Buena Vista, illustrating the Mexican war, and Manila, the Spanish-American war. A museum of relics of all these wars was connected with the displays. Attendants in the uniforms of the Union and Confederate soldiers assisted the spectator to understand the battle pictures.

The Galveston Flood was a living picture of remarkable effects obtained by the use of plastic art combined with mechanics and electricity. The immediate foreground was real and the still life was full size. Real grass, real trees, fences and houses appeared about the spectator. As the picture receded objects gradually flattened out, yet with their angles so constructed that each retained its true perspective. They became flatter and flatter until they merged into silhouettes. In the view of Galveston, the foreground was real water carried back into the picture, so that practically all the water lapping the beach and stretching away into the middle distance was real. A new invention kept the water in continual motion. The illusion was carried out all the way to the horizon so that the eye could follow a wave as it flowed from under the feet of the spectator far away into the picture, until its individuality was lost in the wide ocean distance.

Fire Fighting was something new under the guise of amusement. A corps of wonderfully trained firemen who were almost circus performers in agility and acrobatic skill kept the thrills working for nearly an hour. Seated in a vast auditorium the audience watched the alarm turned into a modern fire station five hundred feet from the grandstand. The firemen were seen to leave their beds, slide down the brass poles, hitch the horses and respond by dashing through a moving panorama of the New York streets. Just in front of the audience a six-story block was ablaze. People appeared at the windows, screaming for help. As the firemen rescued the unfortunates by aerial hooks, the whole scene was enveloped in a fiery glare. No fire was used but the effect was produced by electricity, steam, stained glass, celluloid, silk and other mechanical appliances. The effect was startling especially as the building collapsed after the victims were removed.

Twenty Minutes to the North Pole:

The Piker, as the visitor was known, discovered the North Pole in twenty minutes, a feat beyond Arctic explorers. The distinguishing feature of this show was an Atlantic liner two hundred feet long by fifty feet wide, with every appointment of the modern seagoing vessel. Gang planks connecting the vessel with the immense theater lying next to the ship carried the passenger into the main illusion which consisted of a trip to the North Pole, the grinding of the vessel through ice fields and bergs, an electrical effect giving a startling illustration of the Northern Aurora, and the final discovery of the Pole.

The main pavilion of the Scenic Railway was one of the finest as well as one of the most striking structures to be seen on the Pike. This pleasure railway cost \$260,000 to install and furnished to visitors the most entertaining ride ever derived from a diversion of the switchback type. The three-mile trip was made in a few minutes, in absolute safety. It was interesting and encouraging to know that of the many millions of passengers carried on the scenic railways operated at Chicago, San Francisco, Buffalo, Atlanta, and other cities where expositions had been held, no accident had befallen any person, the feature of safety being the first consideration both in construction and operation of these railways. The great length of the scenic railway on the Pike gave a new thrill not hitherto enjoyed by those who had become acquainted with that style of locomotion. The conception of the scenic railway belonged to the promoter who erected the one on the Pike. The idea was born of the switchback railway, a very good thing in its time, but which has, under the skillful hands of the inventor, developed with the passing of time into an elaborate and complete combination of pleasure-giving features.

The largest open air show was the reproduction of the Holy City, erected on eleven acres of undulating ground happily suggestive of the Palestine original. One thousand in-

habitants of Jerusalem were conveyed to the Exposition by chartered steamer sailing from Jaffa. Not the least interesting feature of Jerusalem was the cyclorama of Solomon's Temple, operated as a separate concession under the Jerusalem exhibit company. The temple was a model of Solomon's masterly architecture. It showed the tabernacle of the ancient Hebrews with its paraphernalia; a complete and realistic model of the ancient Jerusalem; a handsome oil painting forty feet long, showing Mt. Sinai and the encampment of the Israelites before it. Dissolving views, moving pictures, and lectures illustrated the various customs of the Israelites.

Pike Day:

Pike Day was made notable by a parade of many peoples and animals. In the long column which wound its way along the exposition avenues were five thousand people representing every part of the globe. Of the animal creation there were two thousand. Jaunting cars were drawn by donkeys. Japanese men pulled their jinrikishas. Arabian horses were harnessed to the Persian kajagas and zebus to the chariots of India. Sledges with teams of Alaskan dogs had place in the procession. Ostriches and giraffes were attached to modern sulkies to illustrate their training. Zebras and the fat-tailed sheep of Africa supplied motive power of dog carts. Caparisoned elephants and dromedaries carried on their backs the colonies from Cairo and Turkey. Bronchos were as numerous as the Indians of the Wild West Congress. Rough Riders of the world crowded upon the heels of the Egyptian dragomen urging with loud cries their donkeys. Dancers of all nations exhibited their talents as the parade moved along. There were groups of nautch and devil dancers, geisha girls, whirling dervishes, buck and wing dancers. The buffalo, the snake, the katchina and a score of other dances were performed. And all along the route a babel of weird music fell on the ears of the throngs of fascinated spectators. Industries were portrayed by the groups from Jerusalem, by the Swiss from the Tyrolean Alps, by the weavers of Ireland, the tea pickers of Ceylon, the candy makers of Persia, the carvers from Japan. Flower girls and singers from Paris, merchants from Stamboul, gypsies from Spain, plantation darkies from the South, fire fighters, deep sea divers, Chinese silk weavers, fire worshipers from Persia, basket makers of the Zunis and scores of other groups had places in this polyglot parade which made Pike Day one of the special occasions to be long remembered.

CHAPTER III

CONCESSIONS IN OPERATION

The Daily Court of Adjustment—Character of Claims and Grievances Various Forms of Settlement—Inside Inn Concession Commended—Good Order on the Pike—A Wise Policy—No Rioting or Damage Closing Night—Important Recommendations

THE work of Director of Concessions Gregg and of the Committee on Concessions did not decrease with the closing of contracts, the construction of the concession buildings, the establishment of the methods governing relations between the Exposition and the concessions. The work increased rather than decreased with the opening of the Exposition. The Concessions Committee became almost immediately an adjustment committee. Day after day, week after week, the adjustment committee met with the director of concessions to pass upon the numberless claims and complaints of concessionaires. Offices were opened in Intramural station No. 1 and there the director and the committee sat as a court to hear the grievances and the requests and to pass upon them. The scope of the adjustment court as it may well be called is set forth in the following extract from the report of Director Gregg:

Very soon after the opening of the Exposition it became apparent that the work of the adjustment committee which was composed of members of the Concessions Committee would be arduous and would require not only patient consideration but sound judgment, in a word the best of business ability.

At the first meeting of the director and the adjustment committee held in the offices located in Intramural station No. 1 a list of claims of concessionaires was presented by Mr. Simpson, acting on behalf of the department of concessions. This list was found to contain a number of claims based upon right and justice; others that had a shadow of right and justice, backed by all the arts and genius known to concessionaires to stay the payment of amounts justly due the Exposition; and others which were built upon any statement that offered an excuse for the delay of payment. These last-mentioned claims were illustrated by arguments that the attendance was not reaching the estimate made by the concessionaire when his concession was financed, and the contract made; that the people who attended the Fair were not spending as much money as they ought to. That a large number of concessionaires had claims which were entitled to consideration the adjustment committee and the director soon realized but in most cases the sums demanded were out of all proportion to the claims. Session after session was held, and afternoon and night the committee and the director labored to bring about settlements that would be just to the concessionaire and fair to the Exposition.

The Court of Grievances:

It was found that one cause for complaint was the cost of building and installation

in order that the street of amusements should be in keeping with the increased size and scope of the grounds and exhibit palaces. The labor conditions existing here had forced a capitalization far in excess of that contemplated at the time the original contract was made. It appeared that unless the Exposition would agree to an equitable adjustment upon the increased cost of construction and installation the original contract would have to be foreclosed and the Exposition would have to operate the concession under the terms of contract. This it was not thought best to do and aid was extended when and where it was deemed wise, but never without the sanction of the Executive Committee or the Board of Directors.

In other cases, bad administration of what should have been a good concession had brought the company into a position where it could not pay. In cases of this kind a reorganization was insisted upon, and aid was extended.

In a number of cases concessionaires were induced to pay a flat rate for the unexpired term, but in all cases, this was based upon the earnings of the concession figured for thirty days prior. It is believed that this resulted in the collection of a very large sum and the saving to the Exposition Company of a large amount of money.

Cases came before the committee in which it was evident that features for which the claimant had the sole right or control or the promise of the Concessions Committee that similar rights would not be granted had as competitors those who had secured from foreign commissioners and exhibitors the right to sell in the spaces set aside for their use goods, wares and merchandise, under cover or the rights claimed by the foreign exhibitors' association. These concessions were operated under the strong shadow of right and could not be controlled. In cases of this kind, the committee and the director of the division adjusted the claim equitably for both the concessionaire and the Exposition. The committee is entitled to the thanks of the Board of Directors and of the stockholders or the Louisiana Purchase Exposition for the time spent for the thought given and for the gratifying adjustment of the revenue due the Exposition.

The language of the concessions contract, framed after no little consideration, specified that the Exposition would not grant a similar contract or concession. It was believed that this language while it would protect the concessionaires at the same time would protect the Exposition and save the annoyance experienced by other expositions of concessionaires infringing upon the rights of others holding exclusive contracts. The plan was found to work satisfactorily, as in the case of the infringement of the rights of a concessionaire the only promise made (which was fulfilled) was that the Exposition would assist the concessionaire in stopping the illegal sale. This course left the Exposition free from damages. Claims of this character were but a small factor in the settlements. It is believed that even this could be improved upon by the elimination of all language in any way relating to exclusive concessions. The reason is that with amusement concessions of an illusionary character electric appliances were used, that this clause of the contract forced the committee and the director to refuse applications of unusual merit; not because they would encroach upon the legitimate claims of others, but the shadow of claim was there, and we knew that it would be used as a basis of claims and damages.

The Inside Inn:

Director Gregg unhesitatingly commends an inside inn concession. In his report, he says:

Properly constructed, properly conducted, properly watched to protect from fire as was the inside inn at the Universal Exposition of 1904, a great temporary hotel within the grounds of an exposition is a feature eminently desirable from the public's point of view, profitable from the standpoint of the exposition management.

The Inside Inn at the Universal Exposition of 1904 had under its roof repeatedly over 4,000 guests and 1,000 employees, a community, a city of 6,000 persons. It was a won-

derful exhibit in the art of reasonable and comfortable entertainment of a great number of exposition visitors. To many persons the inn was a very interesting place and the methods and provisions for entertainment were examined and studied as a part of the Exposition. The Division of Concessions and Admissions had its representatives in the hotel day and night. Necessarily built of temporary and combustible material, the inside inn presented a condition which called for ceaseless vigilance. Several times small fires started but not one of them so much as burned out the contents of a room. The director of concessions and admissions to make assurance doubly sure insisted upon fire precautions of extraordinary character. He deems it no more than justice to the concessionaire to state that the demands were compiled with ungrudgingly. The inside inn was one of the most profitable concessions to the concessionaire and it deserved to be.

The Morale of the Pike:

The thorough enjoyment of the crowds on the Pike was commented upon most favorably by visitors. Regarding the maintenance of a proper degree of decorum on the Pike, Director of Concessions and Admissions Gregg says:

The carnival spirit is admirable when it does not overstep the bounds. At no time did the conditions on the Pike become reprehensible. There was always jollity and noise, high spirits and jubilant lire. But it was a subject for congratulation that the enthusiasm never degenerated into abandon and roughness. In the main an American crowd can be trusted. There will be exceptions which must be watched and checked. The Division of Concessions and Admissions in the provisions adopted to ensure control or the Pike trusted the crowd and looked closely after the occasional individual wanting in regard for the rights of his fellows. So long as the crowd was only good natured and noisy there was license. Whenever and wherever turbulence showed its first symptom it was quickly and quietly squelched.

The effectiveness of the policy adopted by the division was at no time better illustrated than during the closing night of the Exposition. The weather was perfect; the crowds were enormous. The Pike was the center of interest. Closing night has come to be dreaded by exposition authorities by reason of the disposition of disorderly element to take advantage of it. The Division of Concessions and Admissions prepared carefully for the control of the Pike on closing night, and the results were satisfactory in an eminent degree. There was no destruction of property. There was no injury of person inflicted. There was throughout the evening a high degree of enthusiasm and interest. The lights went out upon a night that was without criticism in the behavior of the attendance.

Closing Night:

In preparation for the closing night, the director called upon the chief of police, Colonel Kiely, and the chief of detectives, Major Desmond. Plans were carefully considered to maintain order and at the same time not interfere with a proper display of enthusiasm. In accordance with the plans agreed upon, the chief of police stationed two hundred men in uniform along the Pike. These men were not more than ten or fifteen feet apart on each side of the thoroughfare. Sixty mounted men in uniform were stationed in groups of two or three at intervals along the center of the Pike. Plain clothes men numbering one hundred were scattered through the throng. City firemen to the number of twenty-nine stood all the evening long at the plugs on the Pike. These were in addition to the exposition fire department. Squads of United States infantrymen with guns were located at several points. The strength of the Jefferson guard was largely centered on the Pike. The director transferred all of his inspectors and employee that could be spared from other points to duty on the Pike. These men wore their stars concealed and acted under strict instructions. In addition to the force on the Pike the chief of police located a large reserve at the police station with hurry

wagons. But so complete were the arrangements that it was never at any time necessary to call in the reserve.

As was expected, the disorderly element was represented upon the Pike but those who came bent upon mischief found themselves face to face with policemen who knew them and the word went along, "Nothing doing here tonight." Those who had come to take advantage were warned as soon as seen with the result that they did not start trouble. The crowds were permitted to make all of the demonstration they pleased so long as they did not damage property or injure persons. The result was that not a pane of glass was broken; not a disturbance worth mentioning occurred. The moral effect of the presence of this force proved to be all that was needed to ensure good order from darkness at five p.m. until the lights went out at midnight.

An incident will serve to show how completely the Pike was under control. A well-meaning visitor who had purchased from a concessionaire a small sword cane drew it from its sheath to show it to a companion. Instantly a man tapped him on the shoulder and said, "What are you doing with that?" The visitor wanted to know what business it was of the man who had accosted him. Immediately the latter turned back his coat and showed the badge of an inspector of concessions. Before the visitor could return the sword to its sheath, he was tapped on the other shoulder by another man who told him he must put up the sword cane. He wanted to know what business the other had to interfere and was shown another star. This incident was told by the visitor subsequently as showing how completely the Pike was under the control of the exposition management.

The director has never witnessed a popular ovation exceeding in enthusiasm and magnitude that which attended the drive of the President of the Exposition down the Pike shortly before midnight. At that hour the Pike was filled with people from end to end so much so as to make movement necessarily slow. The Yellowstone coach carrying the President and a number of Directors and officers of the Exposition was driven the entire length of the Pike. The cheering and the demonstrations were those of unbounded friendliness and admiration but not one incident occurred that could be criticized. From the Pike the President drove to the Plaza of Saint Louis and turned out the lights with fitting ceremony. The behavior of the Pike that evening will be remembered as one of the most satisfactory experiences of the Division of Concessions and Admissions.

The Business System:

The system of handling the revenues of an exposition calls for elaborate detail in methods and blanks. It requires the organization of an office and field force built up not as an established business after years of labor but an organization, ninety-five per cent of which in the interest of economy must be brought together quickly; the process of training as to duty and requirements must be condensed into ten days before the opening of the exposition. The director of concessions and admissions in his report makes definite and important recommendations based on his experience:

At St. Louis the opening day was the beginning of an engagement lasting seven months. Each day's work had to be cared for within certain hours and the bills for collection had to be in the hands of the collector. No delay was excusable. To delay in this respect would have resulted in placing the whole system of accounts in confusion. Work, work, ceaseless work was the only solution. When it was taken into account that many thousand audit sheets were made up, that each of these sheets contained from one to one hundred station reports, the magnitude of this work becomes apparent.

Two expositions have been held that in volume of money expended, size and beauty of grounds, value and extent of exhibits, care for the comfort and amusement of visitors, have

nearly equaled each other. The methods of each when compared should offer some valuable suggestions for future expositions. The Louisiana Purchase Exposition did improve upon known records and systems. There are two factors that enter into all expositions - the artistic and the sordid one of money with which to pay bills. In the effort for artistic beauty the needs of the Division of Concessions and Admissions should not be overlooked. I would suggest that one of the first requirements be adequate ground space for concessions; that this space be located and set aside; that it be turned over for sub-division to the concessions committee; that the grounds and buildings committee locate and set aside any available space in the main picture for use of concessions; that they accompany same with rules governing the character of the business and the size and style of the buildings.

It is also earnestly recommended that an accounting building be erected in which to house the following forces: the director of the division, chiefs of the departments of concessions and admissions, the auditor, and the treasurer. The work of all these is so closely allied that separation adds an additional burden to the duties of each.

The Ideal Organization:

The organization of this division should be upon the lines of an assistant to the director, strong enough to relieve him and to assist in the negotiation of contracts and the settlement of disputes. The department chief should devote his time and attention wholly to the administration of his department and should be held responsible for the quick and close collection of the audits as made and reported. He should be given power under the contract to act, and the director should be named as arbiter between the department and the concessionaire. It is only by striking quick and striking hard under the rights given by contract that prompt collections are made, that lawsuits are averted, and the duties of an adjustment committee made light.

The writer was complimented by the first vice-president of the World's Columbian Exposition upon the magnificent system and showing of the admissions department at St. Louis. It was stated that if the World's Columbian Exposition had employed the same system and care in its execution thousands of dollars would have been saved. The Chicago official being a member of the bureau of collections and admissions and chairman of the finance committee had made this branch of exposition work a study at all expositions since 1893. He stated that the systems of collections and admissions installed at the Louisiana Purchase Exposition were without doubt entitled to stand at the head of exposition work of this class and character.

For the man who engages in exposition work for the first time it is difficult to understand and accept the warnings of danger that lie in the postponement of questions from day to day with the hope that a more favorable opportunity for their settlement will present itself. The work and needs of the department chiefs should be given careful consideration and daily conferences should be held, in order that the greatest assistance be given their work. All questions pertaining to systems and blanks and rules should be settled at an early date. With the number of vital questions that must be encountered and settled regarding finance and construction during the pre-exposition period it is an easy matter to forget the importance of questions not supposed to become active until possibly thirty or sixty days before the exposition period.

It is recommended that in the preparation of the photographic pass the name of the chief of the department be printed upon the pass and that the name or names used to prevent counterfeiting and for validation be signed upon the pass in the department by a clerk or clerks as named upon the pass; that these men be of high character and be placed under bond. By this means the work of signing thousands of books by the chief of the department in person can be obviated.

Some Rules of Action:

No concession should be allowed to operate with tickets without the use of turnstile and chopper box. When a separate charge is made for children, turnstiles should be used. Otherwise, the proportion of children admitted will be much larger than normal.

Claims should not be allowed to accumulate. The ones not settled by the chief of the department and the director should be taken up by the adjustment committee without delay and pushed to settlement or turned over to the legal department.

When the vast volume of business is considered, and the fact taken into consideration that an exposition must of necessity open with the majority of its force composed of raw recruits; that the exhibitors, concessionaires and others are equally new to the rules, it is not surprising that some mistakes occur. But it is remarkable what a strong force is developed even in so short a time. Under the guiding hand of the chief of the department assisted by the men he has selected as his lieutenants and placed in charge of his sub-departments a corps of workers is trained that for honesty, integrity and devotion to duty rival the forces of the oldest and best-established business houses. The rule here for the selection of men was that they must have strong endorsement. The endorser was given to understand, that while he would be notified of any wrongdoing of his protege, yet the man had to stand on his own merit and was not retained if incapable.

The letting of concessions contracts should not be delayed for too long a time with the hope that something better may appear. If the scheme is a good one, clean, with men at its head of known business integrity, and with the money in sight to build and operate the same, close the contract and assign the ground necessary to operate it and write "finished" upon that much of your work. Otherwise, you will be forced to crowd the work of weeks into days, delay the starting of your building operations and push your finishing touches on buildings and grounds into that period which has come to all expositions-namely the rush of the last thirty days of the pre-exposition period-in order that you may be ready for the opening day. This is the stupendous hour when minutes are dollars and twenty-four hours a day but scant time within which to complete the task of being ready when the gates shall swing open for a campaign lasting without interruption for six or seven months. It is a time that taxes the brain and nerves and causes men to become physically old before their time. No work is so exacting as that of an exposition. Each day's business must be closed within itself and not become a part of or interference with that of another day. And I am glad to say that in our case the task was accomplished, and the work well done.

It is recommended that the contract for the taking of photographs for full term and monthly passes be entered into at a date as early as possible as it is of the utmost importance that this branch of the work be in operation at least ninety days before the opening of the exposition. By this means all exposition employee can be cared for as fast as they are engaged and as many exhibitors, concessionaires and others as can be made to see the extreme importance of securing their passes and avoiding the rush that always comes when it is found that pre-exposition passes will not be accepted for admission after the closing day of that period.

The bonding of employees was done by a bonding company. In the department of concessions, the bonds ranged from \$1,500 to \$10,000. In the admissions department the bonds ranged from \$3,000 to \$20,000. The Exposition Company paid all premiums, the same being charged by the auditor to one account for all bonds, under an appropriate account heading. That the company should pay the premiums is but just. The rate secured by the Louisiana Purchase Exposition was such that a much higher bond than usual could be carried at less expense than the ordinary bond had previously cost.

The value of secret service cannot be gainsaid but it is a question as to how this service should be conducted: whether as was done by us, the whole cost of this branch of the work being charged to one division and divided between the departments; or whether it would not serve a wider and better purpose if this service was organized in the form of a bureau or

department of the exposition.

it is of course imperative that the chiefs of departments have in their employ certain people who can be relied upon to make special study of the work and needs of the department and report upon the same. While this is the best class of secret service work, it can be carried out to the greatest advantage when performed by someone who has other duties which bring him into actual contact with the sub-department to which he reports. This special work must be built up on the idea of the chief and is for his own particular and personal guidance in carrying out the work of his department honestly and for the best interests of the exposition.

A practical test has been made of coin for admissions in place of the usual ticket with the result that were i to assume the position of director of concessions and admissions at another exposition the coin-controlled stile would be installed at the earliest date. The loss at the gates from counterfeit, foreign and mutilated coins was but \$302.60, out of millions of dollars handled. With the installation of the proper blanks the work of the department was minimized and safe-guarded to a degree never before secured at an exposition. A revolution in the style and form of admissions has been made. No feature or part of the Louisiana Purchase Exposition was more widely talked about and commented upon than was our admissions by coin. Letters were received from various parts of the United States and from England asking about this feature and the cost of its installation.

Uniforms are a necessary part of the equipment of this division. The cloth, style, and price, as well as the rules governing their issuance and as to payment for same should be worked out and settled long enough before the opening day to have all of the men equipped and ready for work. The rule adopted here was as follows: the Exposition paid for the cap and the buttons. The buttons were a special design worked out by the chiefs of concessions and admissions and were used by this division only. The cloth selected was a blue serge of good quality and made in the prevailing style of the sack coat. The concessions used the single and the admissions the double-breasted style. The coats were furnished with a black button upon a ring in order that by changing the buttons an employee could appear upon the street when off duty wearing the same suit and yet not be in uniform. At the same time when he left the service, he had a suit for which he had paid a nominal sum, and which could be worn without comment. It is believed that this matter was handled in a manner that was a decided improvement over the usual way in which it has been conducted.

CHAPTER IV

THE BUREAU OF COLLECTIONS

An Original System—All Revenues Through One Channel—Nearly 50,000 Bills Against Concessionaires—Over \$10,000,000 Handled—How the Coins Were Counted—The Intramural's Remarkable Record.

THE revenues were handled by a system differing somewhat from former expositions. Results obtained through the new methods were highly satisfactory. A bureau of collections was one branch of the official organization. The head of it was John W. Dunn, local treasurer. This bureau took charge of the moneys derived from the various sources of revenue. These sources included all gate receipts from the sale either of tickets or of photo passes and from coin machines; all bills against concessionaires and exhibitors for percentages, ground and space rentals and contents of slot machines; all bills for the use of electric light, power and water; all fees for connections for sewer, water, light and motor service and plumbing; and all charges for hauling of garbage and rubbish; all receipts from the Intramural railroad; charges for parking of cars for private parties and for admissions of those occupying same; all receipts from the World's Fair terminal railroad including switching and demurrage on cars; collections for the impounding of horses, wagons and automobiles; various miscellaneous accounts such as rebates on insurance premiums, fire and accident, accounts against state and foreign buildings, state and foreign commissioners, refrigeration plant, special dairy fund, special exhibit fund, bureau of music.

The collection bureau was divided into three departments for the convenience of the collection of the various revenues and to keep the same separate and distinct. These were Concessions collections, Division of Works collections and Admissions collections:

Concessions collections consisted principally of royalties and ground rentals from concessionaires and space rentals from exhibitors; rentals from cash registers and chopper boxes; sale of amusement tickets; and salaries of gate keepers attending such places.

Division of Works collections embraced all applications for connection of water, light, sewer, plumbing, hauling of garbage, removal of rubbish; all monthly bills for electric energy (light and power) and use of water; the impounding of horses, wagons, and automobiles. Miscellaneous accounts were handled and collected in this branch of the bureau, such as rebates from insurance premiums, fire and casualty; bills for music; sales of salvage; all bills emanating from the Transportation department such as switching, demurrage, parking private cars and admissions of occupants of same; freight on livestock and exhibits in and out of the grounds over World's Fair terminal railroad.

Admissions collections were proceeds from sales of season tickets, photo pass tickets and special tickets sold to different visiting organizations, military companies, students and children; proceeds of sales of tickets sold at entrances prior to the adoption of the coin receiving slot machines; sales of all badges used by contractors and exhibitors for different classes of labor; and all coin received by self-registering coin machines used at entrances.

The System in Detail:

Illustrating the details of the system the chief of the bureau of collections says in his report:

The department of admissions was run during the first thirty-five or forty days of the World's Fair with tickets exclusively. After that period change was made to coin admissions at the entrances to the grounds. The cans containing the coin received through the coin-registering machines at the various entrances were delivered by wagons to the collector's office four times each day, sometimes oftener, according to attendance; but as a rule, once in the morning, twice in the afternoon and again at night after closing the gates. An office was arranged at Intramural station No. 1, fitted with cages for receiving tellers in which to count the coins by the Johnson coin counting machines. Each cage was equipped with a machine either for half-dollar or quarter-dollar coins. Each can of coin on being unlocked contained a report from the turnstiles showing just how many pieces of coin the can should contain and with few exceptions the reports and coins were found to tally. When any deficiency was found it was at once noted on the report received from the can and the man receiving the coin represented in that particular can was notified by the department of admissions. Settlement was made daily between the department of admissions, the auditor and the treasurer of the Exposition, reports being sent every morning to these departments. A report previously furnished to the auditor by the department of admissions was checked up with the morning statement and the difference, if any was adjusted. No tickets were sold at the entrances after the introduction of the coin slot machines but different kinds of tickets were on sale by the department of admissions, where a clerk made report dally with proceeds to the collector, the accounting being made for each day in admissions receipts. Photo pass tickets were issued jointly by the department of admissions and the collector, each providing a clerk, one to issue the photo pass order and the other signing and receipting for the money; settlement was made twice a day, noon, and night. Money deposited for badges used principally by contractors for laborers was handled in nearly the same manner as photo pass sales except that money received on deposit for badges was subject to withdrawal at any time the badges were returned accompanied by the receipt for the money paid for such badges. All money so refunded was paid by voucher warrant drawn on the treasurer by the auditor out of what was called "Badge Account Special Fund." The force employed in the admissions collection department consisted of one chief clerk and three to five assistants according to the attendance. On special days when large crowds were expected clerks were detailed from other departments to assist. The receipts from the gates being entirely one-half and one-quarter dollars were put up in bags, each bag having a tag stating amount and the gateman's name and containing even amounts in hundreds-either one, two, three, four or five hundred dollars to the bag. Each day a certain amount was exchanged for currency from the money changers who were connected with the admissions department. The balance not needed for change was sent direct to the U. S. Treasury where it was counted and credited to the bank in which the treasurer of the Exposition deposited; at the same time notification was given the collector through the bank and return was made at once or counterfeits, mutilated or foreign coins, such amounts being made good by the collector to the bank.

The Intramural railroad was handled by Superintendent Murphy and several assistants as far as the actual running of the road was concerned; but the receipts were handled through the bureau of collections. Two clerks or receiving tellers handled all of the money, one on day run and one on night run. There were seventeen stations, and each conductor made his round trip from Station 1 to Station 17 and return and settled with the receiving clerk for his round trip. The number of passengers carried was 6,274,380 and amount collected \$627,473.80. It was a remarkable fact that the Exposition lost nothing through the Intramural railroad from counterfeits, mutilated or foreign coins.

The Number of Accounts:

The magnitude of the work of the bureau of collections is shown by the enormous number of accounts which passed through. During seven months, the life of the Fair, there were delivered to the bureau from the concessions department bills for collection to the number of 49,413. About 1,100 credit memorandums were given to correct errors and to aid the collector in adjusting accounts.

The Division of Works delivered to the collector 13,418 bills for collection, and several hundred credit memorandums to correct errors and cover allowances were also issued in adjusting accounts.

The bureau of collections received during the life of the Fair, twenty-one thousand nine hundred and sixty-four (21,964) checks and drafts drawn on various banks, in the course of collecting accounts against concessionaires, exhibitors and various other parties.

it is a remarkable fact that while many checks were returned on account of no funds or payment being stopped the department was fortunate enough to have only four checks unpaid at the close of the Fair and the total of those was only \$121.04, three of them, amounting to \$115.96, having been given by one concessionaire and payment stopped same day.

The following shows the amount of money handled by the bureau of collections during the entire period of the Exposition:

Admissions	\$6,224,245.66
Concessions Revenue.....	2,832,390.72
Intramural Railway Revenue	627,473.80
Electric Energy, Light and Water Service.....	524,899.47
Transportation Revenue.....	141,270.82
Photo Pass Revenue.....	50,120.00
Music Receipts.....	82,721.82
Miscellaneous Receipts	65,656.70
Ground Rentals	119,268.18
Festival Hall Special Fund.....	52,949.00
Badge Account Special Fund.....	11,179.00
Uniform Account Special Fund.....	7,861.06
Pay Roll Account Special Fund	5,567.05
Dairy Account Special Fund.....	5,406.96
Agricultural Hall Special Fund	794.47
Salvage Account	25,000.00
	\$10,776,804.70

CHAPTER V

ATTENDANCE

Its Character—Teachers and Students—Liberal Policy Toward Schools—Foreign Visitors—The Morale—Paid Admissions 12,804,616—Total Admissions 19,694,855—The Record, Day by Day—Rules Governing Free Admissions—The Several Kinds of Passes—A System That Worked Well

ANALYSIS of the attendance led to conclusions showing that this Exposition had a character of its own. No other exposition, universal, technical, or local, drew such a large proportion of its attendance from students and school children. No other exposition was so thoroughly studied as was this by young visitors. From the middle of June to the Thanksgiving holidays the presence of the student and teacher was a very notable fact. The Exposition made encouragement of this kind of attendance one of its pronounced policies. This was the first of expositions to elevate the educational above the commercial in its plan and scope. The practical application of this policy of the exposition management was made of lasting good by the encouragement of attendance on the part of the teachable.

The fact may be stated that the rule of the radius in attendance was not borne out in the experience of the Universal Exposition of 1904. The usual proportion between local and distant attendance was not sustained at St. Louis. Greater attendance than experience promised came from considerable distances. Many cities and towns and localities about equidistant from St. Louis and Chicago sent larger numbers of their citizens to the Louisiana Purchase Exposition than they did to the Columbian. This was demonstrated by the railroad statistics.

Attendance from foreign countries was much greater at St. Louis than at Chicago. The Pacific slope sent to the World's Fair of 1904 perhaps three times as many visitors as went from there to the World's Fair of 1893. It was estimated that seventy per cent of the attendance at Chicago was local; of the attendance at St. Louis not fifty per cent was local. The explanation is that the population of St. Louis in 1904 was not one-half that of Chicago in 1893. This large and unusual proportion of attendance from considerable distances proved the value of the exploitation work of the Exposition.

With the close of the public schools in June of the exposition period the Committee on Press and Publicity took up the question of free admission of children on certain days of each week. On the 11th of July the committee forwarded to the Executive Committee a strong recommendation that upon specified days during the summer months children under fifteen years of age, singly or in groups of not more than five, when accompanied by an adult paying the regular admission charge, be admitted free. The recommendation was adopted.

Subsequently the Executive Committee was urged by the Press and Publicity Committee to set apart a day in each week when schools or classes accompanied by their teachers would be admitted at a nominal fee in order to visit and study in a systematic manner the exhibits. The Executive Committee approved this recommendation, and it went into effect with the opening of the schools in September.

During the last six weeks of the Exposition, in pursuance of the policy advocated by the Committee on Press and Publicity, Saturdays were made free days for children. Results showed the wisdom of this action both as a stimulus to attendance of adults, and what was more important, as a benefit to the children. There were few days when small children in bodies accompanied by their teachers could not be seen visiting the exhibits and examining them in a systematic manner. School officials co-operated heartily and provided plans for study at the Exposition. Following the close of the Exposition the Board of Education by unanimous vote extended thanks to the Exposition for the special privileges of admission granted to pupils, adding,

This thoughtful provision enabled the Board of Education to utilize the great educational lessons of the Fair in the schoolrooms. It has enabled the teachers to lead the children to a better appreciation of the world in art, science and industry, and it has allowed the public schools to participate spiritually in the greatest modern achievement of peaceful competition. To have inspected the World's Fair intelligently has been in itself a liberal education. On behalf of all the children in the city the Board of Education tenders thanks to the Board of Directors of the World's Fair for the free admission of children on Saturdays which has made it possible for every child of the city of St. Louis whether rich or poor to profit by the wonderful influence of the greatest of expositions.

During the one hundred and eighty-four days of the Exposition's existence there passed through the turnstiles 19,694,855 persons. These figures do not comprise the census of the Exposition's population. A site far exceeding any preceding world's fair encouraged conditions which were without precedent. A hotel within the grounds having hundreds of employees and thousands of guests was one of the unusual features. The collection of Filipino villages and camps housed a permanent community equal to a small city. The colonies of primitive people spread over many acres and numbered several hundreds of persons. Within their camps the British and Boers dwelt in harmony by night as well as by day. The Jefferson guard and the fire department were Intramural contingents having no occasion to pass the gates when off duty. Military camps and barracks accommodated visiting bodies numbering at times several thousand uniformed men. The Pike was an avenue of a mile on which communities from all parts of the world had their abiding places for the exposition period. There were other elements of this permanent population. Many of the buildings erected by foreign governments and states and territories had their sleeping and living rooms as well as public accommodations. Commissioners and official staffs and employee seldom left the grounds.

The Record of Good Order:

Regarding the morale of the multitudes the report of the director of exploitation contains the following:

On a balmy spring day, the last of April the invocation of the opening ceremonies end-

ed with the Lord's Prayer while 187,000 people stood reverent. At midnight the first day of December the lights died away for the last time while a vast mass of decorous humanity filled the Plaza of St. Louis. From first to last of these impressive scenes one reads the history of this Universal Exposition in vain for a record of unworthy demonstrations. There have been expositions where fences have been razed to gain entrance, where riotous acts characterized closing hours, where panics led to much distress, where holocaust or crime cast gloom over all. The Universal Exposition of 1904 was remarkably and exceptionally free from disorders and untoward incidents. The life of the World's Fair is entitled to the award of the most notable of all of the exhibits.

During the official daylight hours of the Exposition the population averaged much more than 100,000 persons daily. When the gates closed at night the population rarely fell below 15,000. When the music ceased, when the lights went out, when the Forest City rested, here was still a great community of souls. This resident population gave to the Exposition a character of its own. The two square miles of territory during the seven months was a city of 100,000 and more by day and of 15,000 and more after midnight. Into this city were gathered the peoples of all hues and of all climes. Babel had not 80 many tongues. Manners and customs ranged from highest to lowest types of humanity.

Wonderful facts of this World's Fair community are to be recorded. Not a contagious disease of serious character was reported. No universal exposition has come and gone with so few casualties, so little crime. An Intramural railroad of thirteen miles transported 6,274,000 passengers without serious accident to any of them. The holiday spirit never degenerated to that license which prompted disorder. The pastimes were of endless variety but never degrading. The utilities never failed before the demands of the greatest gatherings. The provisions for safety as well as for comfort were always adequate.

Official Report of Admissions:

The official report of Director of Concessions and Admissions Norris B. Gregg shows that the total recorded admissions for the period of the Exposition from April 30th, to December 1st, inclusive, were 19,694,855; of these 12,804,616 were paid and 6,890,239 were free. The free admissions included from twenty to thirty thousand workmen who were admitted daily for several weeks to complete the work of construction and installation of exhibits. This accounts for the apparently undue proportion of free admissions in May and part of June. In the recorded admissions Sundays are not taken into account, that day having no relationship to the official admissions records of the Exposition. For the convenience of those living within the grounds, passes were recognized at the gates so that those persons could leave the grounds on Sundays and return. The Sunday figures are interesting as showing the extent of the use of this privilege made by the resident population on the World's Fair Grounds. There were of these passes on Sundays 371,682, being an average of over 12,000 on Sundays. The resident population on the grounds ranged from ten to fifteen thousand and for short period reached twenty thousand persons. The presence of this resident population is to be taken into account with the statement of total admissions. No other exposition had a resident population. These people remained in the grounds day after day. They were not counted and are not included in the statement of recorded admissions. The free admissions were almost exclusively confined to employees of the Exposition, of exhibitors and concessionaires, and to children.

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Daily paid and free admissions for April 30 and month of May, 1904:

		Paid	Free	Total
April	30 Saturday (Opening Day).....	125,754	52,669	178,423
May	1 Sunday.....			
"	2 Monday.....	10,483	44,741	55,224
"	3 Tuesday.....	10,153	40,322	50,475
"	4 Wednesday.....	9,030	39,845	48,875
"	5 Thursday.....	10,668	40,762	51,430
"	6 Friday.....	9,441	39,891	49,332
"	7 Saturday.....	17,392	42,964	60,356
"	8 Sunday.....			
"	9 Monday.....	10,267	42,135	52,401
"	10 Tuesday.....	13,914	40,338	54,252
"	11 Wednesday.....	14,271	41,316	55,587
"	12 Thursday.....	14,593	40,461	55,054
"	13 Friday.....	11,813	39,369	51,182
"	14 Saturday.....	26,456	43,948	70,404
"	15 Sunday.....			
"	16 Monday.....	9,514	39,770	49,284
"	17 Tuesday.....	12,391	39,328	51,719
"	18 Wednesday.....	21,292	43,131	64,423
"	19 Thursday.....	25,654	44,334	69,988
"	20 Friday.....	23,431	43,412	66,843
"	21 Saturday.....	41,906	45,558	87,464
"	22 Sunday.....			
"	23 Monday.....	22,210	40,798	63,008
"	24 Tuesday.....	26,845	35,249	62,094
"	25 Wednesday.....	25,243	34,712	59,955
"	26 Thursday.....	25,279	34,436	59,715
"	27 Friday.....	30,830	36,815	67,645
"	28 Saturday.....	44,746	38,460	83,206
"	29 Sunday.....			
"	30 Monday.....	47,691	42,483	90,174
"	31 Tuesday.....	26,505	35,410	61,915
Total.....		667,772	1,102,656	1,770,428

Daily paid and free admissions for month of June, 1904:

		Paid	Free	Total
June	1 Wednesday.....	31,172	35,057	66,229
"	2 Thursday.....	27,040	34,409	61,449
"	3 Friday.....	36,918	36,231	73,149
"	4 Saturday.....	67,066	39,114	106,180
"	5 Sunday.....			
"	6 Monday.....	38,931	38,974	77,905
"	7 Tuesday.....	43,534	37,489	81,023
"	8 Wednesday (Liberty Bell Day).....	61,148	83,361	144,509
"	9 Thursday.....	44,861	38,051	82,912
"	10 Friday.....	39,288	37,420	76,708
"	11 Saturday.....	68,467	41,115	109,582
"	12 Sunday.....			
"	13 Monday.....	39,672	37,305	76,977
"	14 Tuesday.....	49,456	35,897	85,353
"	15 Wednesday.....	49,459	35,088	84,547
"	16 Thursday.....	59,318	36,903	96,221
"	17 Friday.....	59,912	38,349	98,261
"	18 Saturday.....	61,134	35,777	96,911
"	19 Sunday.....			
"	20 Monday.....	47,815	37,138	84,953
"	21 Tuesday.....	62,898	36,482	99,380
"	22 Wednesday.....	65,494	37,792	103,286
"	23 Thursday.....	65,889	40,029	105,918
"	24 Friday.....	49,955	36,514	86,469
"	25 Saturday.....	75,698	40,237	115,935
"	26 Sunday.....			
"	27 Monday.....	38,781	35,113	73,894
"	28 Tuesday.....	63,738	36,359	100,097
"	29 Wednesday.....	66,614	38,152	104,766
"	30 Thursday.....	68,607	37,925	106,532
Total.....		1,382,865	1,016,281	2,399,146

Daily paid and free admissions for month of July, 1904:

		Paid	Free	Total
July	1 Friday	57,726	36,447	94,173
"	2 Saturday	69,320	39,260	108,580
"	3 Sunday			
"	4 Monday (Independence Day)	139,659	39,599	179,258
"	5 Tuesday	50,206	34,156	84,362
"	6 Wednesday	56,455	37,025	93,480
"	7 Thursday	58,851	37,111	95,962
"	8 Friday	46,114	35,021	81,135
"	9 Saturday	62,311	38,736	101,047
"	10 Sunday			
"	11 Monday	44,344	37,185	81,529
"	12 Tuesday	57,676	36,304	93,980
"	13 Wednesday	57,480	36,101	93,581
"	14 Thursday	53,783	35,659	89,442
"	15 Friday	48,137	35,417	83,554
"	16 Saturday	61,397	37,510	98,907
"	17 Sunday			
"	18 Monday	39,751	35,885	75,636
"	19 Tuesday	43,898	33,261	77,159
"	20 Wednesday	47,537	32,373	79,910
"	21 Thursday	57,334	34,151	91,485
"	22 Friday	51,467	34,067	85,534
"	23 Saturday	65,872	36,539	102,411
"	24 Sunday			
"	25 Monday	46,146	35,755	81,901
"	26 Tuesday	55,383	33,620	89,003
"	27 Wednesday	52,927	32,678	85,605
"	28 Thursday	61,535	34,475	96,010
"	29 Friday	44,196	32,848	77,044
"	30 Saturday	85,238	37,041	122,279
"	31 Sunday			
Total		1,514,743	928,224	2,442,967

Daily paid and free admissions for month of August, 1904:

		Paid	Free	Total
Aug	1 Monday	34,322	34,107	68,429
"	2 Tuesday	60,476	74,715	135,191
"	3 Wednesday	52,439	32,234	84,673
"	4 Thursday	55,947	31,603	87,550
"	5 Friday	56,139	32,262	88,401
"	6 Saturday	99,851	37,316	137,167
"	7 Sunday			
"	8 Monday	61,498	67,227	128,725
"	9 Tuesday	62,847	33,793	96,640
"	10 Wednesday	68,174	32,607	100,781
"	11 Thursday	75,902	33,703	109,605
"	12 Friday	69,510	35,244	104,754
"	13 Saturday	84,615	41,487	126,102
"	14 Sunday			
"	15 Monday	57,184	56,766	113,950
"	16 Tuesday	65,713	34,029	99,742
"	17 Wednesday	82,939	32,622	115,561
"	18 Thursday	68,071	30,636	98,707
"	19 Friday	64,040	28,620	92,660
"	20 Saturday	86,704	33,959	120,663
"	21 Sunday			
"	22 Monday	70,877	63,173	134,050
"	23 Tuesday	89,352	35,297	124,649
"	24 Wednesday	92,781	35,720	128,501
"	25 Thursday	88,510	34,651	123,161
"	26 Friday	94,168	36,256	130,424
"	27 Saturday	113,700	38,989	152,689
"	28 Sunday			
"	29 Monday	74,668	81,080	155,748
"	30 Tuesday	74,518	34,298	108,816
"	31 Wednesday	87,303	34,104	121,407
Total		1,992,248	1,096,498	3,088,746

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Daily paid and free admissions for month of September, 1904:

		Paid	Free	Total
Sept	1 Thursday	91,962	33,667	125,629
"	2 Friday	82,983	33,831	116,814
"	3 Saturday	93,497	87,396	180,893
"	4 Sunday			
"	5 Monday (Labor Day)	135,821	73,801	209,622
"	6 Tuesday	78,692	35,127	113,819
"	7 Wednesday	99,896	37,179	137,075
"	8 Thursday	105,079	38,230	143,309
"	9 Friday	98,808	38,795	137,603
"	10 Saturday	94,604	38,922	133,526
"	11 Sunday			
"	12 Monday	76,782	35,650	112,432
"	13 Tuesday	76,489	34,127	110,616
"	14 Wednesday	97,319	37,323	134,642
"	15 Thursday (St. Louis Day)	358,403	46,047	404,450
"	16 Friday	96,122	34,989	131,111
"	17 Saturday	97,248	37,419	134,667
"	18 Sunday			
"	19 Monday	72,728	32,824	105,552
"	20 Tuesday	87,287	35,104	122,391
"	21 Wednesday	103,693	35,329	139,022
"	22 Thursday	114,738	35,882	150,620
"	23 Friday	103,098	36,078	139,176
"	24 Saturday	79,981	33,726	113,707
"	26 Sunday			
"	28 Monday	78,591	32,676	111,267
"	27 Tuesday	83,942	32,799	116,741
"	28 Wednesday	94,782	33,669	128,451
"	29 Thursday	93,307	33,721	127,028
"	30 Friday	87,709	33,951	121,660
Total		2,683,511	968,262	3,651,773

Daily paid and free admissions for month of October, 1904:

		Paid	Free	Total
Oct	1 Saturday	83,143	34,175	117,318
"	2 Sunday			
"	3 Monday	79,849	32,212	112,061
"	4 Tuesday	87,096	32,557	119,653
"	5 Wednesday	107,225	32,755	139,980
"	6 Thursday (German Day)	146,350	38,202	184,552
"	7 Friday	107,458	33,924	141,382
"	8 Saturday (Chicago Day)	125,394	37,923	163,317
"	9 Sunday			
"	10 Monday	85,184	32,454	117,638
"	11 Tuesday (Memorial Day)	143,795	36,052	179,847
"	12 Wednesday	131,038	34,939	165,977
"	13 Thursday (Connecticut Day)	133,152	35,134	168,286
"	14 Friday	119,118	34,647	153,765
"	15 Saturday	118,609	35,652	154,261
"	18 Sunday			
"	17 Monday	98,228	32,328	130,556
"	18 Tuesday	117,569	32,364	149,933
"	19 Wednesday	122,431	32,714	155,145
"	20 Thursday	124,107	32,250	156,357
"	21 Friday	98,241	30,955	129,196
"	22 Saturday	112,100	34,410	146,510
"	21 Sunday			
"	24 Monday	79,688	30,811	110,499
"	25 Tuesday	90,961	30,902	121,863
"	26 Wednesday	102,179	31,177	133,356
"	27 Thursday	104,577	31,413	135,990
"	28 Friday	91,877	31,392	123,269
"	29 Saturday	91,263	33,128	124,391
"	30 Sunday			
"	31 Monday	57,517	29,710	87,227
Total		2,758,149	864,180	3,622,329

Daily paid and free admissions for month of November and December 1, 1904

		Paid	Free	Total
Nov	1 Tuesday.....	73,512	28,975	102,487
"	2 Wednesday.....	76,049	28,560	104,609
"	3 Thursday.....	78,860	28,779	107,639
"	4 Friday.....	65,508	27,789	93,297
"	6 Saturday.....	82,274	56,824	139,098
"	6 Sunday.....	.....	.....	.....
"	7 Monday.....	44,206	27,285	71,491
"	8 Tuesday.....	53,779	26,565	80,344
"	9 Wednesday.....	38,809	22,837	61,646
"	10 Thursday.....	53,080	24,526	77,606
"	11 Friday.....	58,304	25,765	84,069
"	12 Saturday.....	72,682	50,310	122,992
"	13 Sunday.....	.....	.....	.....
"	14 Monday.....	46,982	25,781	72,763
"	15 Tuesday.....	58,414	26,021	84,435
"	16 Wednesday.....	61,120	26,290	87,410
"	17 Thursday.....	64,430	26,107	90,537
"	18 Friday.....	58,185	26,436	84,621
"	19 Saturday.....	74,683	57,570	132,253
"	20 Sunday.....	.....	.....	.....
"	21 Monday.....	44,964	26,050	71,014
"	22 Tuesday.....	53,754	26,180	79,934
"	23 Wednesday.....	54,145	25,250	79,395
"	24 Thursday (Thanksgiving Day).....	129,230	52,599	181,829
"	25 Friday.....	74,362	49,261	123,623
"	26 Saturday (Roosevelt Day).....	130,506	33,252	163,758
"	27 Sunday.....	.....	.....	.....
"	28 Monday.....	45,383	26,170	71,553
"	29 Tuesday.....	52,639	27,053	79,692
"	30 Wednesday.....	41,335	26,935	68,270
Dec	1 Thursday (Francis Day).....	118,133	84,968	203,101
Total.....		1,805,328	914,138	2,719,466

Free admissions on Sundays from April 30 to December 1, 1904:

		Free
May	1.....	15,038
"	8.....	14,078
"	15.....	17,133
"	22.....	12,718
"	20.....	11,880
Jun	5.....	14,009
"	12.....	12,244
"	19.....	12,275
"	26.....	10,845
July	8.....	12,086
"	10.....	11,282
"	17.....	10,291
"	24.....	11,414
"	31.....	10,225
Aug	7.....	9,900
"	14.....	10,267
"	21.....	12,283
"	28.....	13,027
Sept	4.....	14,116
"	11.....	12,465
"	18.....	11,075
"	25.....	14,526
Oct	2.....	15,065
"	9.....	16,589
"	16.....	12,202
"	23.....	10,160
"	30.....	10,091
Nov	6.....	9,333
"	13.....	8,280
"	20.....	9,394
"	27.....	7,391
Total.....		371,682

Recapitulation :

	Paid	Free	Total
April 30 and May	667,772	1,102,656	1,770,428
June.....	1,382,865	1,016,281	2,399,146
July.....	1,514,743	928,224	2,442,967
August.....	1,992,248	1,096,498	3,088,746
September.....	2,683,511	968,262	3,651,773
October.....	2,758,149	864,180	3,622,329
November and December 1.....	1,805,328	914,138	2,719,466
Total for exposition days	12,804,616	6,890,239	19,694,855
Total for Sundays		371,682	371,682
Grand Total for all days	12,804,616	7,261,921	20,066,537

A tabulated statement showing the season or term coupon tickets sold and the use of them, is given by the department of admission as follows :

Coupon Tickets Sold and Average Price of Admission :

Season, adult	@	\$25.00	3,649	184	671,416	\$91,225.00	352,391	25.89
Season, children	"	15.00	187	184	34,408	2,805.00	13,405	20.79
Stockholders	"	12.50	12,433	50	621,650	155,412.50	489,602	32.17
Stockholders	"	15.00	317	50	15,850	4,755.00		
General public	"	12.50	2,171	50	108,550	27,137.50		
General public	"	15.00	100	50	5,000	1,500.00	85,235	33.60
Special, August	"	5.00	282	15	4,230	1,410.00	3,663	38.49
Nat'l Educ. Ass'n	"	3.00	1,839	10	18,390	5,617.00	14,080	39.18
Five coupon tickets	"	2.50	156	5	780	390.00	696	56.04
Special, November	"	5.00	974	27	26,298	4,870.00	16,470	29.57
			22,108		1,506,572	\$295,022.00	975,632	30.24

The Attendance by Rail:

An excerpt from the report of the traffic manager regarding the co-operation of railroads in the matter of attendance is interesting at this point.

At an adjourned meeting of the American association of general passenger and ticket agents held at the Southern hotel, St. Louis, January 28, 1904, C. L. Hilleary, traffic manager, appeared before this body requesting the consideration and adoption of the following resolutions:

FIRST: That all tickets reading through St. Louis in any direction carry with them the privilege or a stop-over for ten days at St. Louis.

SECOND: That a rate of one fare and a third for the round trip be made from all points in the United States to St. Louis. That tickets be on sale from April 28th to November 25th, 1904, with return limit of December 5th.

THIRD: That a rate of one fare for the round trip plus 50 cents, \$1.00 or \$2.00 be made to St. Louis from all points in the United States. These tickets to be on sale from April 26th to November 25th, 1904, with return limit of twenty days.

FOURTH: Coach excursions to be run from all points in the United States on basis of one cent per mile in each direction (tickets good only in coaches). That these coach excursions be run every ten days beginning with May 22nd and continuing until such time as increased traffic would warrant the discontinuing of coach excursions, with return limit of seven to ten days, governed by the territory from which the business originated.

At a meeting of the St. Louis association of general passenger and ticket agents which was held at the Planters hotel on January 28, 1904, it was agreed to recommend to the American association of general passenger and ticket agents the adoption of the plans or rates submitted by Traffic Manager Hilleary.

The Southeastern passenger association was the first association to meet and legislate upon rates for the World's Fair. Later the New England, Trunk Line, Central passenger and Southwestern passenger associations met and concurred in the recommendations of the St. Louis association or general passenger and ticket agents. Later the lines which were

members or the Trunk Line association arranged for the sale of Variable route tickets or, in other words, tickets reading to St. Louis via one direct route and returning to the point or purchase via another direct route on the basis of 80% and 66 2/3% respectively for one way west-bound fare via routes traveled, with further provision that tickets might be sold via Chicago in one direction at short line fares giving the passenger privilege of traveling from New York to St. Louis via Chicago and returning via Cincinnati and Washington.

The above harmony of action on the part of the various passenger associations of the United States contributed largely to the success of the Exposition. It is safe to say that no other exposition has had the co-operation of the railroads to the extent that was given ours. In addition to the continued low rates, the passenger departments of our great trunk lines were very liberal in the matter of advertising the Exposition. Time tables, folders, posters and other attractive literature were extensively circulated in an endeavor to influence traffic for the Exposition.

I give below a statement of tickets validated by the St. Louis Joint validating agency covering the period from May 1st to December 1st. These figures represent tickets purchased from territory beyond a limit of approximately 250 miles from St. Louis. Within this limit by far the greater part of the business to St. Louis originated but the information in detail covering the movement of traffic above mentioned has not been obtainable.

I also give below a statement of tickets taken on deposit for stop-over privileges. These tickets read through St. Louis to points beyond and represent only the tickets that were deposited for stop-over privileges from May 1st to December 1st, 1904:

Tickets Validated at St. Louis:

B. & O. S. W.	70,054
Burlington	55,292
Big Four.....	113,789
C. & A. R. R.....	118,093
C. & E. I	4,322
C. P. & St. L	144
Frisco System.....	90,619
I. C. R. R.....	72,114
L. H. & St. L.....	7,700
L. & N. R. R.....	35,975
Mo. Pac. R. R.	60,228
M. & O. R. R	6,141
M. K. & T	31,920
Rock Island System	12,059
St. L. I. M. & S	84,077
St. L. & S. W.....	11,379
Southern R. R.....	17,818
T. St. L. & W.....	17,265
Vandalia Line	95,419
Wabash R. R.	197,879
Diamond Joe Line	41
Total.....	1,058,219

Tickets Taken on Deposit for Stop-Over:

B. & O. S. W.	1,719
Burlington	4,301
Big Four Route	2,404
C. & A. R. R.....	6,331
C. & E. I	474
C. P. & St. L	67
Frisco System	1,911
I. C. R. R.....	5,415
L. H. & St. L.....	34
L. & N. R. R.....	1,418
Mo. Pac. R. R.	1,888

Tickets Taken on Deposit for Stop-Over-Continued:

M. & O.	581
M. K. & T.	976
Rock Island System	1,116
St. L. I. M. & S.	1,827
St. L. & S. W.	867
Southern.....	601
T. St. L. & W.	98
Vandalia Line	8,529
Wabash R. R.	8,866
Diamond Joe Line	5
Total.....	48,473

Rules Governing Passes:

The rules and regulations governing free admissions during the Exposition were promulgated after thorough investigation of the experience of former expositions and after consideration of the subject in all of its branches. These rules and regulations received the approval of the National Commission. Their sufficiency was established by the fact that it was not found necessary to alter them. This solution of one of the most delicate problems of an exposition was a matter for congratulation. The rules and regulations as fixed and as strictly observed to the end of the Exposition were as follows:

The official badges of the officers and Directors of the Company, Directors of Divisions, and chiefs of departments of the Exposition duly approved by the Board of Directors of the Company; the official badges of the officers and members of the National Commission duly approved by said Commission; and the official badges of the Board of Lady Managers duly approved by said Board shall entitle the officers and members wearing the same to free admission to the exposition grounds.

Card passes for the entire period of the Exposition shall be issued to the following officials and their wives; to-wit:

The President of the United States,
The Vice-President of the United States,
Members of the cabinet,
Justices of the supreme court of the United States,
The secretary to the President of the United States,
Members and officers of the National Commission,
The Directors and officers of the Exposition Company,
The Mayor of the City of St. Louis.

Card passes for the entire period of the Exposition shall be issued to the following persons to-wit:

Members of both houses of Congress and the chief officers thereof,
The diplomatic corps,
The diplomatic representatives of the United States abroad,
The governors of states, territories, districts and dependencies of the United States and the commissioners of the District of Columbia,
Commissioners of foreign countries accredited to the Exposition,
Commissioners of states, territories, districts and dependencies or the United States accredited to the Exposition,
Directors of divisions and chiefs of departments and bureaus of the Exposition,
The widows of deceased Directors of the Exposition Company,
The members of the Board of Lady Managers,
Members of the United States government board,
The commandant of the Jefferson guard and his official aides,
The members and chief officers of the Municipal Assembly or the City of St. Louis,

The heads of the departments of the municipal government of the City of St. Louis,
The chief of police and the chief of the detective force of St. Louis.

Limited admission passes shall be granted under such rules and regulations as the Exposition Company may prescribe to the following classes of persons whose duties require their presence upon the exposition grounds to-wit:

The judges and jurors of awards,
Employees of the Exposition Company,
Employees of the National Commission,
Employees of the Board of Lady Managers,

Officers and employees of the United States actually in charge of or connected with the government exhibits or otherwise officially engaged within the exposition grounds,

Agents and employees of foreign governments actually in charge of or connected with their exhibits or buildings,

Agents and employees of states, territories, districts and dependencies of the United States actually in charge of or connected with their exhibits or buildings,

Duly accredited press representatives,
Presidents, general managers and general passenger agents of railway companies,
Private exhibitors and their employees,
Concessionaires and their employees,

The term "employee" as herein used shall be construed as meaning only such persons as are actually and necessarily employed within the exposition grounds, and when in any case such employment ceases the pass shall be taken up and canceled.

Vehicles may be admitted to the grounds upon payment of 50 cents for automobiles and for vehicles drawn by two horses; upon payment of \$1.00 for vehicles drawn by three or more horses, but the driver and occupants thereof shall be subject to the general rules governing admissions.

Provided: That all official vehicles and the vehicles of officers and Directors of the Exposition Company, and of its Directors of Divisions; of officers and members of the National Commission; of the members of the Board of Lady Managers; of the Commissioners-general of foreign and state governments, and of districts and dependencies of the United States shall with the driver thereof be admitted free upon presentation of official permit to be issued under this rule.

Any person entering the grounds upon a badge or card pass shall be required to deposit with the gatekeeper a personal card with pass number thereon.

In exceptional cases the President of the Exposition Company may issue passes to persons not included in the foregoing classification when such action is deemed for the best interests of the Exposition.

Passes shall not be replaced during the period for which same may have been issued. When a pass is lost prompt notice should be given to the department of admissions in order that notice of same may be posted and the pass taken up if presented.

When an employee is discharged or resigns a pass shall not be issued to his successor until the original pass is returned to the department of admissions.

The Louisiana Purchase Exposition reserves the right to call in and revoke or cancel any pass at any time.

Passes are void and shall be forfeited if showing any evidence of alteration or erasure. All passes are nontransferable and will be forfeited if presented by any other than the person named thereon.

Any person holding a pass may be required to prove his identity by signature or otherwise. All passes shall be issued subject to the conditions printed thereon.

All passes issued in conflict with the foregoing rules and regulations shall be recalled and canceled.

Operation of the Pass System:

The records of the Exposition show that the rules and regulations governing free admissions were most rigidly observed. The card pass was hedged about by restrictions to render impossible any misuse of it. It could be obtained only upon requisition issued from the office of the President. Card pass No. 1 was drawn in favor of the President of the United States and was delivered to him; the succeeding twenty numbers were delivered to members of the cabinet and to justices of the supreme court of the United States. Card passes were issued to United States senators, members of the House of Representatives, members of the diplomatic corps in Washington, diplomatic and consular representatives of this government abroad. To governors of states and members of state commissions were issued 1,258 of the card passes. To commissioners general and members of their staffs from foreign countries were issued 622 card passes. Upon recommendation of the Committee on Press and Publicity there were issued of the card passes 654 to publishers and editors and staff correspondents of newspapers and magazines. Card passes were issued to members of the National Commission and their wives, to members of the Board of Directors and their wives, to executive heads of the Exposition, to the government board, to the Board of Lady Managers. Altogether in the exposition period there were issued 5,442 card passes.

These card passes were delivered from the office of the secretary. So carefully was the issue conducted that fewer than a dozen were canceled, either lost in transmission or after they reached the holder. The card pass was validated by the signature of the holder on the back. It called for deposit of the personal card of the holder for the gate record and for purposes of identification when required. A complete list of the persons to whom the card passes were issued was preserved in the office of the secretary and a copy of it was filed with the National Commission. It is difficult to see how the issue of these card passes could have been restricted more prudently or how the uses of them could have been better protected.

For employees a photographic coupon pass was employed. This form of pass demonstrated its safety and convenience. Through the President's office and the Division of Exploitation were issued 5,856 photographic passes of which 729 were on account of employees of foreign commissions and 1,023 on account of employees of state commissions. Occasionally a photographic pass was reported lost and was placed on the stop list. About fifty per cent of the lost passes were recovered. No complaint was made of the misuse of photographic passes the hands of persons to whom they were issued by the Executive department.

Special Coupon Passes:

A special coupon pass having ten coupons and provisions for its limitation in time was utilized for emergency and short-term purposes. These passes were not always issued with the ten coupons attached. They were employed with such number of coupons as the special occasion might demand. The ten-coupon pass to be valid required signature by the holder on the back. Each coupon was endorsed in the presence of the gateman when this pass was presented. On the front of the pass was required the countersignature of either the President or the secretary of the Exposition. There were distributed through the President's office 20,987 of these special coupon passes bearing ten or fewer coupons.

The use of these special coupon passes may be illustrated by a statement of the distribution of them in considerable numbers. Many musical organiza-

tions filled engagements at the Exposition participating in ceremonies or in other events extending through several days. The limited term ten coupon pass met the requirements for admission of such organizations. The President's office delivered to the director of exhibits 8,998 of these special coupon passes for the uses of musical organizations. Three national political conventions visited the Exposition on the invitation of the management, one coming from Chicago and another from Indianapolis. To the delegates of these conventions there were issued through the President's office 4,500 of the special coupon passes with five coupons attached. In mid-summer the exposition management with the approval of the National Commission extended to clergymen with regular charges an invitation to spend part of their vacation period at the Exposition. With the invitation was presented one of these special coupon passes having five coupons attached. There were distributed 1,500 of these passes to clergymen. The International Parliamentary Union which came in a body from Washington after assembling in this country and which held its sessions on the World's Fair grounds by invitation of the Exposition was supplied with these special coupon passes. This form of pass met other demands similar to those mentioned. If there was any misuse it was insignificant in extent.

The invitation extended to clergymen to visit the Fair during their mid summer vacation was accepted more generally than had been anticipated. Appreciation of the courtesy was shown in hundreds of letters expressing personal impressions and discriminating judgment upon the Exposition. It came repeatedly to the notice of the exposition management that many ministers were lecturing upon the Exposition and were publishing comments and descriptions as the results of their visits. As the Exposition neared its close the management with a hearty endorsement of the National Commission gave notice that all clergymen who desired to avail themselves of the courtesy would be supplied with complimentary passes for the month of November. Under this arrangement more than two thousand of the November passes to ministers were issued.

The single trip pass, as it was called, was necessary to meet requirements which did not call for the other forms. These single trip passes were slips bound in book form. They were issued singly and were taken up at the gates. The blanks showing for what purpose or to whom this form was issued were filled in by stamps. A large number of these single trip passes, perhaps the largest, was required for military organizations encamped within the grounds in order that members of such organizations permitted to leave the grounds might return without paying admission at the gates. These trip passes were issued to commanding officers. This form of pass was utilized by the Philippine exposition board to the number of 19,000 issued on requisitions from the Philippine board approved by the President or secretary of the Exposition. These passes were given out by the Philippine board to members of the constabulary and to officers and employee of the board who had occasion to leave the grounds. To the director of exhibits for emergency use were delivered by the President 13,400 of these single trip passes; the government board used 8,120. In every instance either by stamp or by filling in the blanks left for the purpose the use of the single trip pass was identified. The trip pass also served a useful purpose in the admission of processions to participate in ceremonies. Of this form of pass were issued 83,540.

CHAPTER VI

EMERGENCY EXPLOITATION

Efforts to increase Attendance—Co-operation of Associated Bill Posters—Newspaper Advertising—Airship Contests—Aeronautic Records Made—Pyrotechnic Displays Draw Well—Excursions from Cities—Municipal Days and State Weeks

THE third month brought a realizing sense of the degree in which exposition attendance was responsive to special efforts and to extraordinary attractions.

A sub-committee of the Executive Committee, Chas. W. Knapp, Nathan Frank and Wilbur F. Boyle, was appointed to recommend a plan to increase attendance. This sub-committee reported in favor of what was aptly termed emergency exploitation. It recommended an appropriation of \$75,000 to be immediately available for the conduct of emergency exploitation between July 19 and the 1st of September along these lines:

- a. Poster and special newspaper exploitation.
- b. Special days for events calculated to increase the attendance on certain days and of certain classes of people.
- c. Lectures, personal solicitation and moving pictures.
- d. Advertising tours with Philippine constabulary and Garde Republicaine bands.
- e. In working up special industry days in conformity with classification "b" the entire management of the programs and events shall be under the authority of the chief of the particular department directly concerned. It is believed there can be a day made for every department of the Exposition as for instance, Transportation Day, Manufactures Day, Scientific Day, Musical Day, Theatrical Day, Mining Day, Educational Day, Electricity Day, Farmers' Day, Apple Growers' Day, Anthropological Day, Physical Culture Day.

The plan provided for an emergency exploitation committee composed of Franklin Ferriss, Walter B. Stevens and Frederick J. V. Skiff, this committee to have general charge of the exploitation recommended. The committee on emergency exploitation was representative. It entered the field of ceremonies. It required the co-operation of the department of press and publicity. Its success depended in a large measure upon support by the Division of Exhibits.

Franklin Ferriss was made chairman of the committee. The work was undertaken promptly. Results up to the first of September were so satisfactory that the sub-committee recommended to the Executive Committee continuance of the committee on emergency exploitation and an additional appropriation. The committee exercised the duties assigned it by the Executive Committee until the close of the Exposition, expending upon emergency exploitation approximately \$155,000.

Special Days and Events:

Adopting the assignments of special days and events already made by the Committee on Ceremonies the committee on emergency exploitation added thereto seventy-four special days and forty-seven special events. Provision also was made for fifteen special weeks ten of them being in honor of states, the remaining five being designated "President's Week," "Lumbermen's Week," "Modern Woodmen of America Week," "Flower Show Week" and "College and University Week." The additional special day assignments consisted of thirty-two city days, four state days, six industry days and thirty-two miscellaneous days. The forty-seven special events provided by the emergency exploitation committee included championship football games, fireworks displays, airship flights and exhibitions, balloon ascensions, parades.

Having provided for special days and features, the emergency exploitation committee in various ways impressed these attractions upon the attention of the public. Display advertising was one of the methods employed. Every special day or event deemed of sufficient importance was advertised in the newspapers. In this way expenditures aggregating \$34,000 were incurred. By careful comparisons and tests the committee reached the conclusion that the results in stimulated attendance more than justified these expenditures.

Poster advertising was tried with satisfactory results. The Associated Bill Posters and Distributors of the United States and Canada holding their annual convention on the exposition grounds and celebrating July 15th as Poster Day tendered to the Exposition the free use of their boards throughout the United States for the entire month of August. The Executive Committee accepted the tender and the emergency exploitation committee distributed through the organization of bill posters 15,000 sixteen-sheet posters, 30,000 eight-sheet posters and 10,000 three-sheet posters. This distribution and posting according to the reports received from various sources was most thorough, embracing forty-five states, Oklahoma and Indian territories and provinces of Canada. In this territory 1,973 towns were covered. Besides the posters supplied by the exposition management concessionaires delivered to the association 28,000 eight-sheet posters, 12,000 three-sheet posters, 1,500 sixteen-sheet posters and five hundred twenty-four-sheet posters. The emergency exploitation committee was so well satisfied with the reports from this experiment with the boards that poster advertising of special days was made a feature until the close of the Exposition. Twenty-seven special days and thirty-two special events were advertised by posters, the aggregate number of such posters being 460,039.

Traveling Representatives:

Personal effort proved to be one of the most effective methods of emergency exploitation. The committee sent representatives of the Exposition to states and cities that had been assigned special days and weeks. These representatives visited the governors of states and the mayors of cities to which days had been assigned. They called upon the editors of newspapers. They arranged for public meetings and for local committees. They distributed hundreds of thousands of pamphlets containing general information about the Exposition and the programs arranged for state weeks and city days. Co-operation of the railroads in the way of special trains and special rates was obtained. Of the cities assigned

special days the following were visited and canvassed by representatives of the emergency exploitation committee:

Memphis, Tennessee.....	September 26
Louisville, Kentucky	September 27
Indianapolis, Indiana	October 6
Chicago, Illinois.....	October 8
Topeka, Kansas.....	October 14
Kansas City, Missouri	October 16
St. Joseph, Missouri.....	October 17
Milwaukee, Wisconsin	October 17
Toledo, Ohio.....	October 31
Cleveland, Ohio.....	November 1
Dayton, Ohio.....	November 2
Springfield, Ohio.....	November 3
Columbus, Ohio	November 3
Cincinnati, Ohio.....	November 6
Sioux City, Iowa	November 10
Minneapolis, and St. Paul, Minnesota.....	November 16

Among the most interesting and most successful special days as shown in increased attendance were those arranged by the several exhibits departments. Transportation Day, Manufactures Day, Mining Gulch Day, Liberal Arts Day, Electricity Day, Machinery Day and Agriculture Day were not only attended by unusual numbers of visitors but were made of extraordinary interest by the elaborate programs provided through co-operation of exhibitors with the chiefs of the departments. Fireworks proved a drawing feature. The emergency exploitation committee expended upon twenty-nine of these exhibitions \$30,000. On each evening of a pyrotechnic display the attendance was appreciably increased.

Airship Exhibitions:

The aeronautic contest under the auspices of the Division of Exhibits had brought to the Exposition several airships which were quartered in the aerodrome. The time within which the contest was to have taken place had expired. It did not appear that any of these airships could fulfill the conditions of the various prizes offered.

Inquiry by the emergency exploitation manager, Mr. McGarvie, developed a willingness on the part of the aeronauts to attempt exhibition flights if some financial encouragement was given. The emergency exploitation committee believing that airship flights if they did not meet the scientific conditions of the formal contest would be of great benefit authorized several contracts. The first was made with Captain Baldwin. As a result, an ascension was made October 25th, with A. Roy Knabenshue acting as navigator. The airship executed several circles over the Administration building and demonstrated its dirigibility. Then the motor became disabled, and the ship drifted with the wind across the river, landing in Illinois. The partial success of this flight and the very marked interest manifested by the public prompted the emergency exploitation committee to offer two prizes as follows:

\$500 in cash for each flight wherein the vessel sailed a distance of at least one mile from the aeronautic concourse and returned thereto with its own motive power.

\$250 in cash should the vessel cover a distance of at least one mile from the concourse under its own motive power and be unable to return thereto.

Captain Baldwin entered the "California Arrow" which on the 31st of October ascended about two thousand feet, moved over the exposition grounds under its own motive power and returned without difficulty to the concourse, winning the first prize of \$500 and establishing a record for dirigibility. A second successful trip was made by the "Arrow" on November 1st. Other attempts were made but were not successful. During the period of these airship flights public interest was keenly alive and admissions were increased many thousands.

In the states to which weeks were assigned vigorous exploitation was carried on by personal representatives. Itineraries covering all important cities having a population of more than five thousand were given to the traveling representatives. An average of four days was devoted to each state. Arrangements were made to have appropriate ceremonies held in the state building during each day of the week assigned. A special program containing the order of ceremonies and descriptions of the most attractive features on the exposition grounds was prepared in pamphlet form and distributed throughout the state. This plan was carried out in the following states:

Missouri.....	August 22 to 27
Indiana	August 29 to September 3
Oklahoma.....	September 5 to 10
Texas.....	September 12 to 17
Arkansas.....	September 19 to 24
Kansas.....	September 26 to October 1
Illinois.....	October 3 to 8
Iowa.....	October 10 to 15
Ohio.....	October 31 to November 5

CHAPTER VII

MEDICAL DEPARTMENT

Not a Single Case of Sunstroke—The Model Hospital—Saving Sense of Responsibility—Admirable Sanitary Conditions—Supply Department—Strict Business Principles—Economy Exercised—The Woman's Anchorage—A Rest Place Conducted by Good Women

THE medical department as organized in June 1902, by Dr. Leonidas H. Laidley who had been appointed medical director of the Exposition. The Committee on Sanitation which had supervision of the medical department consisted of C. P. Walbridge, chairman; A. N. DeMenil, vice-chairman; A. D. Brown, C. F. G. Meyer and Dr. J. J. Lawrence.

In selecting his staff Dr. Laidley chose for his physicians and surgeons, men who had had hospital experience and for his clerks, men who had had army experience. A temporary hospital was opened July 1, 1902, with Dr. Josiah G. Moore in charge. A night force as well as a day force was maintained, and the constant service of a visiting physician was required by the large resident population in tents and barracks during the construction period.

The emergency hospital, a two-story frame building designed and equipped specially for the medical department at the east end of the Model Street, was opened January 7, 1904. On the first floor were two wards, one for men and the other for women, each furnished with 12 beds and six wicker couches. A third room was for isolation and a fourth for insolation. Dr. Laidley reported that not a single case of sunstroke was received during the Exposition. The general operating room, dressing room and sterilizing room were in the rear and the offices of the medical director and his staff in the front. On this floor were also the storeroom, drug room and kitchen and rooms for the chief sanitary officer and head nurse. On the second floor were the dormitories for the staff, nurses and entire force.

Only one ambulance was needed up to the opening of the Exposition with the exception of Dedication Day when two from the St. Louis health department were added to the service. During the Exposition two ambulances were kept constantly ready for calls, a surgeon and a police officer accompanying the driver on every trip. Dr. Laidley said in his report:

Great apprehension was felt that we would not be able to care for the various occasions with large attendance but we were favorably disappointed in finding that owing to the splendid care upon the part of the guards and police officers on the spacious grounds, and because of the character of our city—an individual and collective responsibility in making the Exposition not only the greatest but the most orderly and desirable place for citizens and their guests to visit—there were fewer to treat during the greatest

attendance. This was noticeably so on Dedication Day, Opening Day, St. Louis Day, President's Day, Missouri Day, Fourth of July and Francis Day.

Sanitary Utilities:

Dr. Laidley states that the sewerage system provided throughout the grounds by the Division of Works was "all that could be desired" and that the garbage was cremated at the Exposition's crematory "in a manner demonstrating all the new and well approved methods of caring for the refuse of a city." Daily inspections of the grounds and of all buildings were made under Sanitary Officer James M. Gassaway of the United States marine hospital service, who took charge of this work in June.

The few cases of disease reported to the medical department were confined almost entirely to the Moro and Igorot villages of the Philippine reservation. Forty-five of the Filipinos suffered from beri-beri but only three of the cases proved fatal. The patients were isolated and in a few weeks the disease was stamped out.

Notwithstanding the large resident population and the great number of workmen and other employees on the grounds during the two years of the construction period, as many as 10,000 for a long time, there were only eleven deaths from violence and five from natural causes. The medical department had during this period 6,148 patients, the surgical cases numbering 3,412 and the medical 2,736. The total number of new cases during the Exposition was 7,750, divided into 4,645 medical and 3,114 surgical cases. Only twelve deaths from violence were reported and twelve from natural causes, a total of twenty four for the seven months of the Exposition, the total attendance during the same period exclusive of Sundays being 19,604,855. Of the 18 cases of gunshot wounds treated only one proved fatal.

Three births occurred during the construction period and four during the Exposition.

The Cost of the Medical department was \$22,052.24 for the construction period and \$14,375.47 during the Exposition, a total of \$36,427.71.

The Woman's Anchorage:

One of the provisions made for the comfort of visitors to the Exposition was an institution unique in exposition history, which became widely known as the Woman's Anchorage. The following account of the institution and of the purposes it served is from the report of Mrs. J. H. Roblee, chairman of the board of efficient and good women who managed it for their respective organizations:

Through the courtesy of the exposition management the building known as the "Woman's Anchorage" was occupied as headquarters during the time of the World's Fair by six organizations of women, "The King's Daughters," "Women's Christian Temperance Union," "Council of Women," "Baptist Woman's Mission Board" and "Kappa Kappa Gamma" sorority. A representative from each organization composed the Anchorage board, which had the management of the building. A matron was employed who gave all her time to the care of the place and the comfort of visitors, and each room had its special hostess in charge. The various organizations furnished their rooms in an attractive manner and maintained them as headquarters and rest rooms. On two different occasions the organizations united in entertaining their friends. The first time was on July 1st, when the building was opened to the public and Secretary Stevens and other exposition officials were present; and the second was November 15th when Miss Helen

Gould was the guest of honor. Various other smaller entertainments were given by the different societies in their own rooms, affording opportunity for informal conferences, the renewal of old friendships, and the forming of new ones.

That this little place for rest and comfort was appreciated by the women who visited the World's Fair was obvious. Visitors registered from every state in the Union and from all parts of the world. A total of 8,247 names was registered and many times that number visited the rooms and enjoyed the comforts to be found there.

Persons separated from friends were sheltered for the night at the Anchorage; a large number were treated with simple remedies; a few were helped to find employment; several were assisted to car fare in emergency; through the agency of the Sunday services a score or more were led to accept Christ.

The work at the Anchorage was unpretentious but eminently successful, and each of the organizations feels grateful to the exposition management for granting them the use of the building and thereby making it possible.

The Supply Department:

The Supply department was organized August 15, 1901, by the Committee on Supplies: Norris B. Gregg, chairman; James F. Coyle, vice-chairman; J. J. Schotten, R. M. Scruggs, Charles A. Stix, J. W. McDonald and J. E. Smith. M. D. Lyle was chosen secretary of the committee; upon his death in December 1901, he was succeeded by J. G. Stadelman who continued with the committee as secretary and manager of the department until December 15, 1904, two weeks after the close of the Exposition. Chairman Gregg resigned before the opening of the Exposition on account of his duties as director of concessions and admissions, Mr. Coyle succeeding him as chairman and Paul Brown being added to the committee. The only other change in the membership of the committee was on the death of Mr. Scruggs in May 1904, when Hanford Crawford was appointed his successor.

The work of the department was conducted on strict business principles. Bids for supplies were opened daily by some member of the committee and Secretary Stadelman in the presence of the bidders. The requisitions for supplies came from sixty-five different departments and bureaus of the Exposition and there were frequently as many as fifty requisitions in a single day. Mr. Stadelman in a report of his work, said:

A glance through the records of the department shows a multitude of items purchased-everything from way bills to the material for the World's Fair terminal railroad; from badges for the conductors and motormen to rails, ties and overhead material for the Intramural railroad; from the seed of a "forget-me-not" to the material for the tree moving wagon of the landscape department; from a drawing pencil to steam road rollers for the civil engineering department; from the nails for the horses' shoes to the apparatus for the fire department; from an electric bell outfit to thousands upon thousands of electric lamps and hundreds of thousands of pounds of wire for the mechanical and electrical department; from the plaster and frame work of the beautiful statuary about the grounds to the trumpet in the hands of the plaster cast maiden on top of the Liberal Arts building; as well as horses, vehicles, clothing, beds and bedding for the Jefferson guard and other departments, office furniture and medicine for the hospital and many other items too numerous to mention.

The main office of the department was located in the business part of the city near the sources of supplies and the branch office on the exposition grounds near the sources of requisitions. Manager Stadelman's chief assistants were E. C. Rankin at the main office and H. C. Agnew in charge of the branch office.

The total amount expended for supplies to the close of the Exposition was \$815,033.10, representing over 13,000 requisitions. As the supply department expenses for the entire period, August 15, 1901, to December 1, 1904, aggregated only \$21,608.61 the operations of the department cost the Exposition but 2.6 per cent of the amount purchased.

Of the thousands of articles handled by the supply department in the nearly four years of its existence only one, an electric fan, was stolen or lost in transit. The ten adding machines and 446 typewriting machines used by the Exposition were supplied and kept in repair by the department or under its supervision.

CHAPTER VIII

THE JEFFERSON GUARD

Army Officers Detailed—Character of the Enlisted Men—The Uniforms—Maximum Strength—Duties Admirably Performed—No Serious Accidents—A Tribute to the War Department—The Playground Asylum for the Lost—Fire Drills—The Metropolitan Police

PROPERTY in a universal exposition is subject to peculiar hazard and loss. The articles are the very best of their kinds, unusually presenting novelty of manufacture and design. Some, like confections and wines, tempt the appetite; others like furs and jewels appeal to vanity; still others arouse the sense of cupidity. Expositions are prolific sources of souvenirs; things of trifling importance come to be valued for their pleasant associations. While the great palaces are open to the public little more than one-third of the time they are open to privileged persons all of the time. Sweepers, scrubbers, watchmen, inspectors, electricians, custodians, repairmen, exhibitors and helpers come and go at all times. It must be so. Besides theft and breaches of trust, exposition goods are exposed to fire, imperfect water-pipes, storm leaks and other contingent dangers. Perhaps nowhere is the need of a carefully organized and trustworthy police system more urgent than at a universal exposition.

Section 23 of the congressional act making an appropriation for the Louisiana Purchase Exposition provided, that:

The secretary of war be authorized at his discretion to detail for special duty in connection with the Louisiana Purchase Exposition, such officers of the army as may be required.

Under this provision the war department was requested to detail an officer from the United States army to begin the preliminary organization of an exposition police force which it was determined should be called the Jefferson guard. In compliance with this request Lieutenant-Colonel E. A. Godwin, 9th Cavalry, United States Army, was detailed as commandant and reported for duty February 26, 1902. Colonel Godwin served in this office till March 12, 1904, when he was relieved by Lieutenant-Colonel Henry P. Kingsbury, 8th Cavalry, United States Army. Colonel Kingsbury served till September 30, 1904, when he was relieved by Lieutenant-Colonel Samuel W. Fountain, 4th Cavalry, United States Army. Colonel Fountain served as commandant till the guard was mustered out January 31, 1905. From April 16, 1903, until the force was disbanded, Major Andrew G. Hammond, 3rd Cavalry, United States Army, served as assistant commandant. The entire staff of the commandant was made up of officers detailed from the regular army.

Beginning of the Guard:

June 1, 1902, six privates were enlisted to do guard duty and posted at the Administration building. From this time the strength of the force was gradually increased until September 30, 1904, it reached a maximum of 730 men. When the guard was disbanded January 31, 1905, there were mustered out 232 men. Many of the privates were ex-soldiers who had seen service in the Spanish-American war and in the Philippine islands. Students ambitious to see the Exposition and to improve themselves joined this police force. The Jefferson guard was composed of young men much above the average in intelligence, address and deportment.

In the hot months khaki uniforms were supplied. In the winter months heavily lined woolen overcoats with long skirts and high collars were issued to the men. During the exposition period the regulation uniform was a suit of blue woolen, neat and distinctive in appearance, with caps to match. Barracks and baths were furnished. The regular duty was eight hours a day. Until the opening of the Exposition the salary of a guard in addition to his clothing and lodging was \$50.00 a month; after that it was \$55.00 a month. No one had a better opportunity to see the Exposition and to acquire useful information, or, when not on duty, to visit the entertainments and to hear the musical programs than did the Jefferson guard.

No people are more considerate in crowds than the French. They are accustomed to great masses of humanity at their fetes and public demonstrations. The records show that two stampedes occurred at the Universal Exhibition of 1900 in one of which nineteen persons were injured and in the other five or six were trampled to death. Nothing of that kind occurred at St. Louis. The guards and police were able on every special day to hold their lines and to control the crowds.

At the Universal Exposition of 1904 the lost children cared for at the Model Playground numbered 1,160. Most of these children were taken to the playground by guards who either discovered them or had their attention called to them. These children were returned to their parents on the day, or the night found with the exception of two who were sent home the next day. One guard brought several children to the playground in a single day. As many as seven guards were at the playground at the same time with children who had become separated from their parents. Mrs. Ruth Ashley Hirschfield, custodian of the Model Playground, highly complimented the members of the Jefferson guard for their efficiency and kindness in this work.

High Character of the Guard:

At all expositions visitors are anxious to save time and annoyance by having ready access to sources of information relating to the grounds, buildings, exhibits, offices, attractions, stations, car lines and relevant matters. Prompt and correct answers to questions relating to these and a hundred other subjects have a tendency to inspire confidence in the visiting public. This function devolved upon the Jefferson guard and was discharged admirably.

Upon special days and at special functions a detail of guards acted as honorary escort. The regular post was reinforced to keep avenues open and to maintain order at the exercises. Usually, the escort was drawn up in point-formation

and consisted of either ten or twenty men with a sergeant at the point.

The guards were instructed in the use of fire apparatus. They were drilled to lay a line of hose, make couplings and connections, use the hose-reel, fire extinguishers and other auxiliaries. Each guard was inspected as to his knowledge of the water-service on his post, the location of alarms, hydrants and roadways. He was also clothed with authority to make arrests for smoking in or about the buildings. The exercise of this duty was alone sufficient to keep him busy and alert. During the Exposition there were sixty-five fire alarms, twenty-one of which were false. There was some incidental damage occasioned by water but not a single exhibitor lost seriously by fire in the general exhibit palaces. No distressing accident occurred by reason of fire. When the fact is recalled that several men lost their lives in the cold storage warehouse fire at the Columbian Exposition it will be realized how fortunate is the record of the Universal Exposition of 1904. The fires of the House of Hoo-Hoo, of the Missouri state building and a part of the Jerusalem concession were the most serious. At all of them the guards were prompt to act and proved to be a valuable accessory to the exposition fire department. Following the close of the Exposition nothing occurred to compare with the fire which consumed exposition construction in Jackson Park.

Minimum of Misdemeanors:

A primary object of the Jefferson guard was to protect the property of the Exposition against theft and burglary. At times there were hundreds of thousands of dollars on deposit at the World's Fair National bank. Articles of great value exposed to burglary were constantly watched and protected. The statues, grounds, lawns and flowers required continued vigilance. The guards were sworn in as special watchmen and had the power to arrest offenders and to lodge complaints against them. The complaints of theft were mainly boxes of tools, cigars, candy and articles carelessly left in or about the concession booths. Some complaints of the robbery of slot machines were made. The value of the goods stolen was often over-estimated with a view to claims for damages. The largest theft officially reported was of a garnet necklace from the South African exhibit in the palace of Agriculture. In one case where the value of goods alleged to have been stolen was placed at \$4,500 it developed that a plaster chain had been veneered with gold-leaf and a plaster brick gilded with the same material. The actual value was perhaps \$45.00.

The metropolitan police of the city rendered valuable service in maintaining order. The Jefferson guard acquitted itself with high sense of honor which showed appreciation of the important trust reposed in the organization. No accidents or tragedies could be traced to neglect of duty or to incompetency.

The Exposition was under obligations to the war department for detailing officers of superior attainments to organize and direct the guard. These men entered upon their work with enthusiasm and fidelity. Had officers of less ability been assigned to the important task or had these officers failed to adapt themselves to the unusual circumstances of exposition service the value and efficiency of the Jefferson guard must have been greatly impaired.

CHAPTER IX

INTRAMURAL TRANSPORTATION

The Route Well Planned—Everywhere and Back Again—No Dangerous Crossing—A Series of Fascinating Views—The Operation—Its Cost and Success—Pay Passengers 6,274,738—Not a Serious Accident—Some Comparative Figures—The Pay of Conductors and Motormen

WITH a site a mile and three-quarters long and more than a mile wide the problem of intramural transportation presented itself early and impressively to the World's Fair builders. It was solved in a manner which proved entirely satisfactory. Upon entering any one of the gates of the Exposition the visitor found a station of the Intramural railway within a few yards distance. This road was not elevated but ran almost everywhere and back again to the original terminus. The course was circuitous and there was something worth seeing on every rod of it. The route was so well planned that there were no dangerous crossings although a speed of nearly twelve miles an hour was maintained.

One terminus of the intramural railway was within two minutes' walk of the main or DeBaliviere avenue entrance. Let us suppose that the car be taken at this station, known as Intramural number one. The ride began with a straight-away run of three-fourths of a mile due westward. On the left were the northern facades of the palace of Varied industries and the palace of Transportation, the one 1,200 feet long, the other 1,300 feet. The car passed these splendid fronts at a distance of one hundred and fifty feet. It was possible to reach any of the northern entrances of these two buildings without walking an appreciable distance from an Intramural station.

But while the traveler was viewing the magnificent proportions of these exhibit palaces, he was missing a scene of fascination from the right hand window. "The Pike" presented its street of concession features to the Intramural car on that side. The architecture and scenery and peoples of all nations from Japan to the Tyrolean Alps, from Siberia to the Cliff Dwellers were there.

At the end of the run of three-quarters of a mile the Intramural car moved through the reservation of foreign buildings and was for several minutes among the pavilions of Great Britain, Mexico, Cuba, China, Brazil, Siam, Nicaragua, Belgium, Italy, Austria, the Netherlands, Sweden, Guatemala, and the Argentine. The car passed to the northward of the quadrangle of granite buildings of Washington University, traversed the broad level campus with its aeronautic enclosure and airship stables. It skirted the athletic field where were conducted the Olympian Games of 1904 and then entered upon one of the most interesting localities of the Exposition, the collection of villages of primitive peoples. From the windows of the car were glimpses of the Indian school, of the plaza upon which

Indian games and ceremonies were conducted and of the huts and wigwams.

The Intramural route doubled back from the athletic field which was its most westerly point. It curved to the southward and ran along Arrowhead Lake upon the banks of which was the reservation of the Philippine exhibit. An excellent bird's-eye view was afforded of the forty or more acres occupied by the large exhibit buildings of Filipino architecture and construction housing the products of the archipelago, of the villages of native tribes, of the camps of the Philippine scouts and of Philippine constabulary. The Philippine reservation was an exposition in itself.

Arrowhead and Life Saving Lakes:

Eastward from Arrowhead Lake and the Filipinos the Intramural route followed the base line of the slope upon which stood the largest of the exhibit palaces, the immense hall of Agriculture; a third of a mile in length. On the slope to the northward of the route was the palace of Fish, Game and Forestry. The railway skirted Life Saving lake upon the borders of which assembled daily many thousands of spectators to witness the exploits of the United States lifesaving company from the seacoast. Curving to the southward the route carried the traveler the amazing length of the hall of Agriculture. On the left and above were grouped the imposing buildings of the Japanese garden, the splendid structure of the State of Illinois, the California building, the Hall of Fraternity. On the right, the car gave a fascinating view of the magnificent rose garden constituting one of the outdoor exhibits of the department of Agriculture and the ponds with the lilies in luxuriant growth. Then came the hall of Horticulture in its wonderful setting of flowers and palms and plants.

South of Agriculture the Intramural route afforded a comprehensive impression of the numerous Live Stock pavilions which were a center of interest from the middle of August to the middle of November.

Near Agriculture entrance on the south line of the World's Fair site the Intramural car turned back and to the eastward. It carried the traveler through a beautiful stretch of woodland; it passed the camp and the vast amphitheater of the Boer War and within a few steps of the Hermitage of Tennessee, the South-erland of Georgia and Monticello of Virginia. Stations were located convenient to the south entrances of the palace of Art of which a beautiful picture was obtained from the car window on the left.

Another curve was made away to the southward skirting for some distance the rude and primitive constructions and the noisy exhibits of the Mining Gulch. Thence from the head of the gulch the route entered the Plateau of States passing near the Pennsylvania and Nevada buildings and along the length of the Inside Inn with its accommodations for five thousand people. Nearly a mile the Intramural route was among the buildings of the states, no two of those buildings alike in construction, some representing historic structures, others standing for exhibits of resources. From the car windows the traveler had glimpses of the log house built by General U. S. Grant fifty years ago, of the house of Hoo-Hoo which was the place of public comfort for all lumbermen and their friends, of the home of the Travelers' Protective Association, of the German building reproducing the Castle of Charlottenburg and crowning a summit.

Leaving the Plateau of States and the magnificent mansion of Missouri the car passed the end of the United States government building and descended to the lower plateau, the traveler looking down upon entrances to the palace of Liberal Arts, upon the model camp of marines, upon the Press building, upon the Model Hospital and upon that novel but very interesting feature, the Model Street. Skirting the Model Playground on one side and the eastern or park boundary of the grounds on the other the Intramural route reached its terminal in front of the Manufactures building and upon the edge of the plaza Saint Louis only 500 feet away from the point of starting, a distance from terminus to terminus of six and one-half miles. In the course of its winding way the Intramural car ran within a few feet of the entrances of ten great exhibit palaces and reached every center of interest except the Grand Basin, the lagoons and the palaces of Education and Electricity which, however; were not more than 1,000 feet from the terminal stations.

Intramural Operation:

Into the solution of the transportation problem by the Intramural entered more than a pleasing and comprehensive route. To the operation of the road was given the personal supervision of Director of Transportation John Scullin and the strictest attention of the efficient manager, Thomas W. Murphy.

This line as stated had six and one-half miles of double track which commenced at the main entrance with terminals on the sides of the grand Plaza Saint Louis and encircled the Exposition picture. The fifty-six commodious trolley cars comprising the rolling stock were operated by electricity on a three-minute schedule at an average speed of twelve miles an hour. When the travel was heavy trains were made up of two cars each but at other times cars were run singly.

The Intramural railway was operated 177 days, between April 30th and December 1st, Sundays excluded, and carried 6,274,738 passengers who paid the regular established fare of ten cents each. This yielded a cash revenue of \$627,473.80. The sum of \$2,294.17 was received for advertising in the cars. The net income was \$568,772.09 after deducting the sum expended for operation which was \$60,995.88.

In addition to the paying passengers there were 58,305 people carried free on the car which was run for 95 days on the Philippine extension branch, the cost of maintaining which is included in the operating expenses mentioned above. There were no passes issued for the Intramural railway and therefore no record was kept of the number of World's Fair officials whose duties entitled them to ride without charge. The total number of cars operated was 7,060 and they averaged 34 per day. The trips made aggregated 70,123 and the entire distance covered was 834,000 miles. The number of passengers carried daily averaged 889 per car or 89 per trip for each car, while the number of people transported daily by the whole system averaged 35,452.

The operating expenses exclusive of power and insurance comprised \$56,265.80 for labor, \$52,624.95 of which was for wages of officers, clerks, motormen, conductors, and \$4,640.85 for maintenance of tracks. The sum of \$3,730.08 was spent for supplies used in the maintenance of equipment, printing, stationery, furniture, lubricants and waste.

It is interesting to note that the Intramural railway of the Louisiana Purchase Exposition carried 468,845 more passengers and in seven days less time than that of the World's Columbian Exposition at Chicago, and at an expenditure of \$30,657.42 less for operating expenses.

At St. Louis the percentage of operating expenses to the gross receipts was 9.72 and the cost of operation per passenger amounted to \$.00972. A remarkable feature of the operation of this Intramural railway was the freedom from serious accidents. While there were a few trivial ones none could be attributed to carelessness of the employee. Only one car was damaged and that was the repair car used by the Division of Works. During the entire seven months of operation there was not a single motor or controller impaired or even a carbon brush changed; not a truck or wheel was injured or changed, and the air-brake equipment was kept in similar good order. In view of these excellent conditions the extra parts procured to provide against emergencies were never used.

No strikes or other labor troubles were experienced in connection with the Intramural railway and the discipline maintained was most creditable.

The motormen and conductors were paid at the rate of twenty-three cents per hour; the satisfactory service rendered is the best criterion of their character. They were polite and well-informed men who seemed to take pleasure in courteously answering various inquiries and intelligently directing passengers to their respective destinations and other places of interest to them. Much credit for the successful results shown in the operation of the Intramural railway was due to Manager Thomas W. Murphy. Personal supervision was given by John Scullin, member of the Board of Directors, who performed gratuitously the important duties of director of transportation.

CHAPTER X

DEPARTMENT OF TRAFFIC

Its Organization—The Classification Yard—Precedents Not Reliable —Terminal Charges Inadequate—Important Conclusions of the Traffic Manager—The Rush of Exhibits—General Service Company—Taken Over by the Exposition—The Wisdom of This Action Vindicated

THE organization of the department of traffic was effected early in the spring of 1903 when George W. Ristine of Chicago was placed in charge. During a considerable portion of the pre-exposition and exposition periods John Scullin, a member of the Board of Directors and of the Executive Committee, performed the duties of director of transportation giving his very valuable services without salary.

In September 1903, Mr. Ristine resigned, and C. L. Hilleary was appointed his successor. The organization of the department was completed under Mr. Hilleary who remained in charge until October 1, 1904, when upon his resignation J. M. Allen was appointed traffic manager.

The construction and maintenance of railroad tracks within the exposition grounds constituting the terminals of the Exposition were under the supervision of the Division of Works. During the construction period the track building was confined to the immediate needs of the contractors. These tracks were permitted to remain and were subsequently used in the work of installation, in the operation of the Intramural passenger line and later in the removal of exhibits. Interesting details of the work of the department are given in the following extracts from the report of Mr. Allen:

A depot was constructed at the connection of the Colorado railroad for the purpose or handling exhibits arriving at the grounds in less than carload quantities. A city receiving depot was constructed at the southeast entrance to the grounds for the purpose or receiving supplies arriving by vehicle or electric cars destined to exhibitors and concessionaires within the grounds.

A classification yard comprising tracks having a storage capacity of about 400 cars was constructed on the plateau west of the Philippine reservation. Railroad connections were made with the Rock island company directly west of Skinker road, with the Wabash company at the main or DeBaliviere entrance and with the Taylor City Belt near Tamm avenue on the south side of the grounds. The Taylor City Belt was organized jointly by the Frisco and Missouri Pacific companies, joining these two lines directly south of the grounds, thus affording us three railroad connections through which deliveries were effected.

The operation of tracks or the World's Fair terminal railroad from the beginning until the appointment of George W. Ristine was under the supervision of the Division of Works. The operating department was transferred to the department of transportation under Mr. Ristine while the maintenance or tracks remained with the Division or Works. The motive

power during the work of installation and removal of exhibits was leased from the Terminal railroad association and consisted of a maximum of eight engines during the work of installation. These engines and the necessary force to operate them were under the direct charge of the superintendent.

An arrangement was entered into with the Central Car Service association with reference to car service charge. This arrangement was intended to ensure the Exposition Company a "per diem" charge on all cars of exhibits handled with a reasonable degree of promptness. Owing to the inadequacy of the facilities in the matter of tracks properly located the car service charge reached burdensome proportions. The movement of exhibits did not begin actively until after April 1, 1904, and the maximum number of cars did not reach the grounds until on or about the opening day of the Exposition. After this time the work of switching exhibits was necessarily restricted to locations remote from the main picture so that the pleasure of patrons at the Exposition would not be marred.

Comments on the Traffic Rules:

Some interesting and valuable deductions from the experience of the traffic department are drawn by Mr. Allen in his report as follows:

The Columbian Exposition did not furnish us with reliable precedents to govern our action mainly for the reason that the same conditions did not exist in Chicago as prevailed with us. We accepted as a fixed terminal charge the same rate of six cents per hundred for the installation of exhibits as was named by the Columbian Exposition. We now know that this rate was entirely inadequate. We know that under conditions prevailing with us exhibits cannot be installed on the space of the exhibitor in large palaces for less than twelve cents per hundred. The rules and rates governing the installation of exhibits at this Exposition provided that a terminal charge of six cents per hundred should be made in each direction; that is, the exhibit inbound should pay six cents per hundred for the cost of placing it on space, including the terminal switching charge, and again should pay six cents per hundred for removing it from the space and delivering it to the switching line outside of the grounds. This in our case was all wrong. A charge of twenty-four cents per hundred should have been assessed on the exhibit arriving at the Exposition. The exhibit should have been placed on its space and removed therefrom at the close of the Exposition without any additional charge to the exhibitor.

The complications arising in the removal of exhibits at the close of the Exposition in the matter of arriving at correct weights and collecting therefor was not only annoying to the exhibitor but expensive to the Exposition Company. The St. Louis Terminal railroad association did not grant free return on exhibits passing over the terminals. It was therefore necessary for this department to collect from the exhibitor not only the World's Fair terminal charge of six cents per hundred but in addition thereto the Terminal railroad association charge and a switching charge for the three lines immediately connecting with the terminals of the Exposition; or to permit this entire charge to follow the exhibit through to destination.

For the benefit of future expositions I would strongly recommend as a fundamental principle that the entire terminal charge be incorporated in the item of expense covering the movement of exhibits to the Exposition with the understanding that this expense covers everything and that the exhibits would be entitled to free return to destination from the space at the close of the Fair.

The matter of handling heavy or bulky exhibits is a question that does not admit of any well-defined rule in advance of movement. Exhibit palaces in which heavy machinery is to be installed should be equipped with the most modern labor-saving devices obtainable. The railroad tracks should be carefully laid with the view to permanency and economy in

operation and the charge for unloading and delivering on space of heavy machinery should be based entirely upon the cost and maintenance of the facilities afforded the exhibitor.

In the handling of light and bulky packages particularly foreign exhibits it would be difficult to make an intelligent estimate of the cost of placing such exhibits. Our experience indicates that we have handled cases that were so large as to require an entire flat car for one package the weight of which did not exceed 4,000 pounds. The cost for placing this case on space exceeded fifty cents per hundred and the cost of removing the empty case to storage warehouse was \$10.00. This is not an isolated or extreme case; the packing of foreign exhibits in large cases was the rule instead of the exception.

The General Service Company:

The published rules of the Exposition Company provided a fixed charge for the delivery of exhibit, on the space of the exhibitor and the removal therefrom to the cars of the carriers. This charge included the switching of the cars within the grounds. A contract was entered into between the Exposition Company and the general service company, an independent company organized for the purpose of carrying out this contract. This contract provided in brief that the general service company should for a fixed proportion of the terminal rate unload from the cars and place on space, remove therefrom and reload into cars at the close of the Exposition all exhibits; also that for a fixed rate the company should store empty packing cases, construct and operate domestic and bonded warehouses, deliver ice, remove garbage, furnish pilots, sprinkle walks and roadways and perform other service requiring the use of teams and vehicles. The company employed nearly 200 head of horses and 100 vehicles in carrying out this labor. An indemnity bond in the sum of \$50,000.00 was required by the Exposition to insure the fulfillment of the contract.

While the agreement based upon available information appeared wise in its provisions and highly desirable, many new and complex questions arose which were not anticipated, and which made operation impracticable on the part of either contracting party without material sacrifice to all interests. In April 1904, it was decided that the best interests of the Exposition would be served by purchase of the entire stock of the general service company. The Exposition therefore took over the stock and retaining the services of the manager operated the company as a separate corporation until the completion of the contract.

A detailed report of the operations of this company not only furnishes valuable information for the benefit of future expositions but justifies the action of the Executive Committee in taking full control of this very essential organization.

The following from the report of the vice-president and general manager of the general service company, J. M. Allen, will be found of interest:

The work of installing exhibits actively began a few days prior to April 1, 1904. This company accepted billing from the agent of World's Fair terminal railroad covering the exhibits placed on the unloading tracks. The arrangement provided that we should supply all labor, check clerks, foremen and time-keepers necessary to conduct this work and that the Exposition Company should assume one-half of the expense of joint check clerks and foremen at depots of the World's Fair terminal.

The maximum movement of exhibits was reached on or about May 1st on which date we were placing exhibits at the rate of about three hundred cars per day. The exhibits were not entirely placed until on or about the 12th day of June 1904.

The maximum working force employed by this Company was 900 laborers, 60 foremen, 76 checkers, 76 drivers, 26 office men.

This company supplied the necessary teams, sprinkling wagons and street sweepers for the purpose of sprinkling the roadways of the Exposition. This work was done on a per diem basis. The equipment was under the direction of the Division of Works.

This company constructed three warehouses made with sheet iron sides, gravel roof, size 80x320 feet with cinder floors. It also constructed one special warehouse of similar construction, size 60x256 feet, for the exclusive use of the cases under the jurisdiction of the German commission.

The rate for storage was made five cents per cubic foot and twenty per cent of this rate was under the contract rebated to the Exposition Company for the cost of roads, railroad tracks and fire protection. We seem to have been very fortunate in our estimate of the storage capacity required. I attribute this fact more to good luck than to good judgment, as our records indicate that we were just comfortably able to care for all of the empty cases offered us.

In addition to our warehouses a number of warehouses were constructed outside of the grounds and a great many exhibitors availed themselves of same, believing that they would receive more prompt deliveries at the close of the Exposition than if stored with us.

We constructed a merchandise warehouse for the storage of bonded and domestic merchandise and supplies, size 80x320 feet, made with sheet iron sides, gravel roof and having a two-inch pine floor throughout. In this warehouse was stored all of the merchandise offered by exhibitors and concessionaires. One room in this warehouse was set aside for the use of the custom house examiner and consumption entries were made in this office.

Experience indicates that this warehouse was operated at a very heavy loss; that a warehouse containing approximately 16,000 square feet would have been ample to accommodate all of the merchandise offered.

The Pilot Problem:

Under the terms of our contract this company undertook to supply pilots to outside vehicles entering the grounds between the hours of 9: 00 pm and 8:00 a.m. for the purpose of delivering supplies to exhibitors and concessionaires. A charge was made for this service of fifty cents per hour. This plan was reached as a result of using the Chicago Exposition as a precedent and while it might have resulted entirely satisfactorily at the Chicago Fair it was found to be entirely impracticable with us. The bulk of the supplies came to the grounds on vehicles reaching the gates about five o'clock in the morning and from that hour until half past six or seven o'clock as many as 300 vehicles would enter the grounds. This necessitated the employment of practically 300 pilots and it also was necessary to pay these pilots a reasonable fixed minimum amount for their services. Each pilot could only pilot one wagon or possibly two wagons during the morning hour and while the charge for this service would seem to have been burdensome to the owner of the vehicle the result financially was a severe loss to this company and to the Exposition Company. This service was initiated with the sole object in view of protecting the roadways and grounds of the Exposition.

Early in June 1904, a committee of concessionaires waited upon President Francis and asked relief from the pilot charges. The President promptly granted this relief and promulgated a rule whereby a route clerk would be stationed at each gate at which vehicles would be admitted, the route clerk to supply the driver of the vehicle with a route card for which a charge of twenty-five cents was made. This route card indicated the route via which the driver should make his deliveries and the gate of exit. Jefferson guards were instructed to examine route cards and require a strict compliance therewith. This plan was agreed to by the concessionaires and was carried out until the close of the Exposition. This route service was operated under the control of this company and twenty per cent of the revenue was

passed to the credit of the Exposition Company for the maintenance of roadways.

The physical labor involved in placing exhibits in a large exposition presents very complex and trying propositions. The work must be done by new men, the methods employed must be worked out and above all the results must be obtained quickly regardless of cost. Exhibitors are prone to delay the forwarding of their exhibits until the last moment in order to have them escape the dust and disorder prevailing during the installation period. The result is that the greatest bulk of exhibits reaches the grounds on or about the day set for the opening and the work of installation must be completed at a great sacrifice of money and labor. It is impossible to employ a large army of men skilled in this class of work. First, because the maximum time of employment does not exceed sixty days, and second, good men are not in search of employment and will not leave a permanent place to accept temporary service. Incompetency and dishonesty is bound to prevail where you are obliged to recruit your service from unknown sources.

The management appreciated the conditions and used every effort to insure prompt and efficient labor, but notwithstanding the fact that every effort was directed with the view of carrying out our work in good faith with the exhibitor and concessionaire there is no question but that a great many good causes existed for complaint. I do not believe it is possible to entirely overcome this deficiency and if the entire work was to be done over, I would most heartily recommend an organization similar to the general service company for the purpose of performing the things undertaken by it. I would, however, in the light of experience, try to overcome some of the mistakes made by the Exposition Company and by this company by exacting a charge for service performed commensurate with the work.

Some of the exhibit palaces without tracks covered an area of approximately fifteen acres. The work necessitated the removal of exhibits from the cars under the supervision of the customs officials, carrying of same to exhibit palaces and trucking long distances to space. The average exhibitor quite naturally is first interested in the prompt and careful erection of his own exhibit. He does not seek additional burdens in the way of removing the debris from his exhibit to further the work of his neighboring exhibitor.

The Rush of Exhibits:

It was necessary for this company to simultaneously remove all empty packing cases and debris from the space of exhibitors at time of installation of the exhibit. This required constant vigil on the part of our foremen and men to keep the aisles clear. It also required a vast number of teams in the service of removing empty cases and debris. Our contract with exhibitors covering the storage of empty packing cases and crates seemingly provided a rate sufficiently high to compensate us for the service performed. As a matter of fact, however, the excessive cost of removing cases from the buildings and hauling for a distance of over a mile and the subsequent storing and returning of these cases to the exhibitor represented even at the high rate charged an actual loss to this company for the service. On the opening day of the Exposition it became solely a question of removing all empty cases from buildings and cleaning up all debris regardless of contracts, expense, or anything else, and during the forty-eight hours beginning on the morning of April 28th our entire equipment was kept constantly engaged in this service. We removed to our warehouse during this time 600 cars of empty packing cases and over 3,000 wagon-loads of empty cases and debris. This created an endless amount of confusion and complaint on the part of the exhibitor, a portion of which was not well founded. If it had been possible for the exhibitor to forward his exhibit in ample time to have it placed on space before the opening day our plans for the storage of empty packing cases would have resulted in entire satisfaction both to the exhibitor and ourselves, but instead we stored thousands of cases in our warehouses which had been picked up from the exhibit palaces without contracts owing to the fact that provision had not been

made by the exhibitor in advance of removal. At the close of the Exposition, it again became a complex problem to effect delivery of about 3,000 carloads of empty packing cases to the exhibitors' spaces. The exhibitors were of course anxious to get away and did not in many cases appreciate the vast undertaking confronting us. Many exhibitors secured empty packing cases from outside sources, packed and removed their exhibits before it was possible for us to return the empty cases from the warehouses. The great bulk of exhibitors, however, accepted the cases as they came to them, made the best of the situation and paid us for the storage as per their agreement. A great many exhibitors paid storage for their cases without waiting for the cases simply because they had signed a contract to do so.

The loss to this company owing to the above causes was heavy although our records indicate that the gross revenue from the storage of empty cases far exceeded the revenue for similar service at the Chicago Exposition.

CHAPTER XI

THE WATER SUPPLY .....	646

Many Miles of Pipe—Two Distinct Systems Maintained—Free Drinking Booths—The High-Pressure Service—Extraordinary Protection—The Cost—Only Four Fires of Any Consequence—The Ice Making and Refrigerating Plant—The Profits of the Insurance Companies

THE insurance premiums paid by the Exposition Company during the pre-exposition, exposition and post-exposition periods to September 30, 1905, amounted to \$373,275.14, classified as follows:

Buildings	\$269,99.76
Accident.....	86,174.33
Contents of Buildings.....	24,854.87
Miscellaneous Property	1,404.90
Boilers	541.28
Total payments	<u>\$373,275.14</u>

The matter of fire protection was the occasion of considerable correspondence and of frequent conferences with representatives of the board of underwriters and with the officers of the St. Louis fire prevention bureau. The results were the adoption by the Exposition Company of the high-pressure system and of building restrictions which entirely met the requirements of the insurance companies. When all of these requirements had been complied with the rate of four per cent was established on the exposition construction. Insurance was increased as the construction progressed and diminished when the time came for installation of exhibits, in order that exhibitors might obtain reasonable rates. Refunds as the insurance was diminished amounted to \$64,333.78. The insurance companies therefore received from the Louisiana Purchase Exposition Company the net amount of \$308,941.36. The proof of the extent and completeness of precautionary measures is seen in the fact that the insurance companies did not pay one dollar of loss to the Louisiana Purchase Exposition Company.

How much the insurance companies realized in premiums from exhibitors, from foreign and state commissions and from concessionaires can be stated approximately. It is estimated that the amount paid in premiums paid others than the Louisiana Purchase Exposition Company aggregated about \$300,000.

The rate of four percent was perhaps a fair one taking into consideration the nature of the risk. But even a lower rate would have been justified by the precautions taken on the part of the Exposition for the prevention of fire and for the prompt discovery and extinction of incipient blazes.

Fire Protection:

The fundamental principle in the fire hazard was the distribution of the main buildings forming the grand picture. These were placed three hundred feet apart at the narrowest points and six hundred feet apart on the central axis that divided the picture into two halves.

Much of the wood used in construction of the buildings was covered with fire retardant paint. In addition to this every structure on the exposition site both above ground and underground was built with special regard to the prevention of drafts carrying fire from point to point. In the wooden channel-ways which ran underground through various parts of the site swinging doors were placed at short intervals permitting the passage of water which the channel-ways were designed to carry but preventing the possibility of drafts. In the buildings the hollow walls were broken up into separate compartments by means of fire stops. If a fire started in one compartment it could be readily confined to that compartment.

There was laid mile after mile of water pipes equipped at frequent intervals with standard two opening post fire hydrants. A carefully recruited and well supplied fire department was maintained to make this water protection effective. The latest improved engines, reels and trucks were installed in modern engine houses in various parts of the grounds. These houses were furnished with every modern firefighting appliance including alarms connecting with the city fire alarm system and with alarm boxes of the most approved patterns at many points through the grounds; sliding poles from the dormitories of the firemen to the apparatus floor; swinging harness; hose drying towers and automatic machinery for dropping the stall chains, opening the outer doors and turning on the lights in case of alarm.

The exhibit buildings had three-gallon Babcock fire extinguishers placed conveniently, loaded, and ready for instant service. In the use of these the Jefferson guard and the employees were drilled.

It is said that the contract for the wrought iron pipe used in the water systems of the World's Fair grounds was the largest ever made. Upon the World's Fair site there was an artificial reservoir containing seven million gallons of water. The water system connected by gravity through a two-foot cast iron pipe with the Worthington fire pumps in the exposition power house. These pumps exerted their pressure through a network of wrought iron pipes which covered the entire site underground, and which extended to the roofs of building through stand pipes, and which ran along these roofs so as to reach every part of the buildings. In these wrought iron pipes the pumps automatically maintained at all times a water pressure of one hundred and fifty pounds to the square inch. When a tap was opened anywhere the pumps automatically increased speed to keep up the water pressure. It was only necessary to open a tap in order to obtain at once the full pressure which would result from the operation of a first class engine. These taps were placed at frequent intervals throughout the grounds and in the buildings. Inside the buildings the taps were equipped with nozzles and lines of hose so arranged that a fireman could seize the nozzle and run with the line to any threatened locality.

The Water Supply:

No former exposition was so well supplied with water. Two systems were maintained; one of ordinary pressure for general purposes and another for high pressure as protection against fire. In his report Chief Engineer R. H. Phillips says:

The city mains were close to and some of the smaller ones were within the exposition grounds. An opportunity presented itself here to obtain water very easily and without great expense in case satisfactory rates for water could be made with the city. At the beginning a contract was made with the city for water at twelve cents per 1,000 gallons; later when a large quantity was used a rate of one cent per thousand gallons was obtained. This contract was made and was in force the later part of July 1904.

The mains on the distribution system for the exposition grounds were connected up direct with the city mains. At points of connection batteries of meters were installed by the city as all water was purchased by meter measurement by the Exposition except that used for fire purposes; in this case the amount used for extinguishing fires passed through the meters but was estimated and deducted from meter measurements.

The largest consumers of water on the grounds were the five-hundred-ton refrigeration plant; the exposition power plant located in the Steam, Fuel and Gas and Machinery buildings, and the landscape department.

Water was delivered free to the refrigeration plant by the Exposition Company, as it was also to the Pennsylvania railway locomotive testing plant located in the Transportation building, which was another very large consumer, the larger portion of the water being used to cool the friction brakes.

Stock, fish and game exhibitors were also given free water by the Exposition Company. Other exhibitors, concessionaires, foreign and state buildings were required to install meters and were charged by meter measurements.

Each consumer was charged for the privilege of connecting with the Exposition Company's mains and installing at his own expense the necessary service pipes from the mains to buildings or exhibit booths. This work was done under the supervision of this department, for which a nominal inspection fee was charged.

A number of drinking booths were located at different points on the grounds to furnish filtered water which was not iced but was free to the public. Pressure filters were used to filter the water. These booths served the purpose admirably.

In addition to this supply of drinking water the exposition water company was granted a concession to supply water for drinking purposes. This water was shipped from DeSoto in tank cars, being obtained from deep wells at that place. It was stored in tanks on the grounds, from which it was distributed over portions of the grounds by pipe lines and wagon tanks. This company had approximately 15,000 feet of 2½-inch galvanized pipe on the distribution system, the water being pumped from the storage tanks through the system of pipes to stations along the lines of pipes. At these stations the wagon tanks were filled, and the water hauled at night to the small slot machine tanks. The water was kept iced in these tanks and was always ready for the consumer who placed a penny in the slot, releasing a plunger which in turn was pushed in, allowing one glass to be filled with water.

The following are the total pipe and appurtenances installed on the low-pressure water system:

Water pipe, 12 inches in diameter and smaller	197,098 lineal feet.
Valves, all sizes.....	476
Hose bibbs and street washers.....	309
Fire hydrants.....	163
A total of 37 ½ miles.	

In addition, the Washington University tract was provided with water pipe to the extent of 6,560 lineal feet. The city also had mains on Lindell boulevard, Skinker Road, and inside the portion of the park used by the Exposition to the amount of 13,210 lineal feet making a total of 216,868 lineal feet or 41.07 miles of pipe used by the Exposition. Adding to this the amount of pipe installed by private parties, which was approximately 52,800 lineal feet, makes a grand total of 269,668 lineal feet or 51.07 miles of water pipe used for domestic purposes on the exposition grounds. Of this the landscape department required 37,326 lineal feet or 7.07 miles, the total cost of which was \$18,247.70.

The Fire Protection:

The high-pressure system was determined upon after consultation with representatives of the fire insurance companies. It was installed for fire protection purposes only and was designed according to plans approved by these representatives. The exposition management wishing to make impossible the repetition of the catastrophe which had befallen similar enterprises was very liberal in providing for this system. The total cost was \$326,995.99. The system as provided was such that at least forty streams of 1 ¼-inch nozzles could be played simultaneously on any one of the large buildings with the hydrant pressure maintained at 150 pounds. Fourteen Worthington underwriter fire pumps were installed in the Steam, Fuel and Gas building, the capacity of each pump being 1,000 gallons per minute.

Details of this high-pressure system are set forth in the report of the chief engineer as follows:

A reservoir of 9,000,000 gallons capacity was located 2,400 feet west of the pumps, the water surface of which was twenty-two feet above the pumps. This reservoir was commonly known as Arrowhead Lake and was connected with the pumps by a twenty four-inch cast iron suction main.

Two emergency suction connections were also made by connecting the city main direct to the pumps; both connections were twelve inches in diameter and were to be used only when the water in the reservoir became exhausted.

The discharge from the pumps was carried by a twenty-inch pipe for a distance of two hundred feet, whence it branched into two sixteen-inch pipes; thence into a sixteen, fourteen, ten and eight-inch until the east ends of the Transportation and Machinery buildings were reached when it was taken up by five parallel twelve-inch mains running through the principal streets and alongside the exhibit palaces in the main portion of the grounds. All these mains were cross connected with eight-inch pipe, making a complete distribution system, and completely surrounding each exhibit palace with a pipe line approximately one hundred feet from and parallel with the outer walls.

Fire hydrants were attached to these mains at intervals of one hundred and fifty feet. Valves were generously provided on all mains to allow shutting them off in sections. The state, foreign and concession sections were protected in a similar manner, eight-inch mains being the smallest used in these sections.

In addition to the outside protection the roofs and floors of all buildings were equipped with pipe and hose. In the exhibit palaces, four-inch pipes were laid below the floors at a depth of three feet with hydrants attached at intervals of no greater distance than one-hundred and fifty feet in any direction. Each hydrant was provided with fifty feet of ½-inch hose and a ¾-inch nozzle. This equipment was supplemented by two and three-inch deck turret nozzles piped to an elevated position on the inner side of the curtain walls of the buildings from which a stream could be thrown to any portion of the building. The nozzles were to be used only in case of fire inside the building getting beyond the control of smaller apparatus.

The roofs of these buildings were piped with two and three-inch pipe on which hose openings were placed at intervals of one hundred feet, each opening being provided with a hose valve, fifty feet of 1½-inch hose and ¾-inch nozzle.

All state, foreign and concession buildings were required to be piped in a similar manner with hose openings so located that any portion of the building could be reached with approximately seventy-five feet of hose.

The temporary Fine Art buildings were provided with a system of automatic sprinklers. This system was installed below the first floor, the floors being at an elevation higher than the ground underneath the buildings; 1,038 automatic sprinkler heads were installed on this system.

The pipe systems inside the buildings were connected direct to the mains outside and were subjected to the same pressure at all times.

The owner of each building was required to equip the same at his own expense and in addition was charged a small fee for the privilege of making connections with the exposition company's mains; a fee was also charged for the inspection of the work.

All pipe installed inside of buildings was extra heavy steel with screw ends. All pipe outside of buildings was the kind known as "steel line pipe." Fittings were extra heavy cast iron. All pipe and appurtenances when assembled were subjected to a hydrostatic pressure of 300 pounds per square inch.

The installation of this system was a departure from the customary practice of constructing our water pipe system for both domestic and fire use and was considered the most thoroughly equipped and best system in existence. A pressure of 150 pounds per square inch was carried at all times with pumps in readiness to increase the pressure to 250 pounds whenever necessary.

The following are the amounts of pipe and appurtenances installed in this system by the Exposition Company:

Pipe, 20 inches in diameter and smaller	187,725 feet
Fire hydrants.....	654
Deck turrets	41
Valves, all sizes.....	919
Sprinkler heads	1,038

A total of 36.65 miles.

In addition to the pipe and appurtenances installed in this system by the Exposition Company, state, foreign, concession and government buildings installed approximately 50,000 feet making a total of 237,725 lineal feet or 45.02 miles of pipe in use for fire protection on the grounds.

A fire department was maintained under District Chief A. P. Christie of the St. Louis fire department who was assigned to command by Chief Chas. E. Swingley. This department was aided by a force of fire inspectors, beginning with a force of six men and increased from time to time until the total numbered ninety-three men during the exposition period.

Mr. Fardwell, principal assistant engineer, says in his report:

To the watchfulness, alertness, and eternal vigilance of this force together with the men assigned by the St. Louis fire prevention bureau is due the absence of fires to any great extent. Only four fires of importance occurred on the grounds,

House of Hoo Hoo
 Restaurant in Jerusalem concession
 Missouri State Building
 Ancient Rome concession

The last occurred after the close of the Exposition.

Many persons have called my attention to our great luck regarding fires on the grounds. I want to state emphatically that luck played no part in this matter; watchfulness and alertness alone prevailed, and to the force of fire inspectors much credit is due for the small number of fires. From Chief Christie's report, it will be seen that between March 27, 1903, and December 1, 1904, the record was:

- 111 alarms sounded;
- 4 fires were extinguished by employee, without sounding alarm;
- 26 false alarms;
- 59 fires extinguished by fire department with apparatus;
- 12 fires extinguished by fire department with Babcock extinguishers;
- 6 fires extinguished by use of Babcock extinguishers;
- 8 fires extinguished by watchmen.

A total of 89 fires.

There were 1,270 six-gallon Babcock chemical fire extinguishers installed on the grounds by the Exposition Company which were distributed among the main buildings and smaller buildings owned by the company.

The Refrigerating Plant:

The ice making and refrigerating plant was not only one of the utilities but one of the interesting working exhibits of the Exposition. This plant was conducted by Chief of Refrigeration P. D. C. Ball.

On the 19th of January, 1904, the Exposition Company entered into an arrangement with Mr. Ball, a practical expert in refrigeration, to install the plant for ice making and the refrigerating pipe line on the grounds of the Exposition. The plant had a capacity of 500 tons of refrigeration, divided into 120 tons of ice making capacity, 200 tons of pipe refrigeration and 60 tons of cold storage space. In consideration of Mr. Ball installing and operating a plant of this capacity and paying to the Exposition Company one-half of the net proceeds of operating same the Exposition Company agreed to furnish the main building for installation of the plant, to pay one-half the cost of installation of the pipe line and to pay in money \$20,000.00 toward the expenses of installation and removal of plant. Owing to unavoidable delay in the negotiations for this contract the plant was not in operation on the opening day, April 30th, but furnished refrigeration through the pipe line and to cold storage house May 14th. The first ice was turned out June 14th.

The total cost of buildings and plant complete, including the cost of removing same, was \$127,578.00, divided as follows:

Main building, boiler house and cold storage compartments	\$16,500.00
Pipe line	15,600.00
Boiler plant	10,500.00
Ice making and refrigerating equipment	79,328.00
Removing plant and wrecking building	5,650.00

The pipe line consisted of 2,000 feet of 8-inch pipe, 2,000 feet of 7-inch pipe, 3,000 feet of 6-inch pipe, 2,500 feet of 5-inch pipe, 2,500 feet of 4-inch pipe, 2,000 feet of 3-inch pipe; the refrigeration being carried from the plant to the cold storage boxes of the Tyrolean Alps about 7,000 feet distant. There were taps on the line. The report of operation shows the following:

Ice made.....		25,613,700 lbs.
Ice sold	23,585,839	lbs.
Ice furnished Louisiana Purch. Expo. Co	1,207,360	"
Wastage in house	185,340	"
Wastage in wagons	124,661	"
Ice on hand Dec. 1, 1904	510,500	"
Total pounds.....	25,613,700	lbs.

The total amount received for ice sold was \$73,814.12. The ice furnished the Louisiana Purchase Exposition Company amounted to 1,207,360 pounds valued at \$5,323.65. The total sales from ice, pipe line refrigeration, cold storage and sale of steam amounted to \$84,136.28. The disbursements were \$42,342.42, the cost of manufacturing being \$19,501.95, cost of selling \$18,356.60 and the administration expenses \$3,935.31. The average price at which ice was sold was \$6.26 per ton. The net gain on operation of the plant was \$42,025.30.

POST-EXPOSITION

December 2, 1904 - January 1, 1913

CHAPTER I

GOVERNMENT AID

The Several Appropriations—A Total of \$11,179,000—The Loan of \$4,600,000—How it Was Obtained—National Character of the World's Fair Recognized—Every Dollar Returned - Secretary Shaw's Receipt and Congratulations—"A Record That Will Never Be Broken."

THE total amount appropriated by the United States government in aid of the Louisiana Purchase Exposition was \$11,179,000. This sum as shown by official statements of the secretary of the treasury to Congress was distributed in time and purpose as follows:

Act June 6, 1900 (sundry civil)-	
Expenses of Louisiana Purchase Exposition Commission.....	\$10,000.00
Act March 3, 1901 (public act)-	
Aid to Exposition.....	6,000,000.00
Government building.....	250,000.00
Act June 28, 1902 (sundry civil)-	
Government building.....	200,000.00
Government exhibit.....	800,000.00
Life-saving exhibit.....	8,000.00
Indian exhibit.....	40,000.00
Act March 3, 1903 (sundry civil)-	
Agricultural exhibit.....	100,000.00
Alaska exhibit	60,000.00
Indian Territory exhibit.....	25,000.00
Act March 3, 1903 (deficiency)-	
Expenses of Congressional committees at dedication and opening	11,000.00
Act February 18, 1904-	
Loan, reimbursable.....	4,600,000.00
Testing fuel	60,000.00
Act April 21, 1904-	
Indian exhibit.....	25,000.00
Total	\$11,179,000.00

Government Aid:

While the total is much greater than the amount appropriated in aid of any other exposition by the United States government the fact that this Exposition returned to the United States treasury within ten months \$4,600,000 should not be forgotten. The terms of the loan of this amount made February 18, 1904,

were fulfilled to the letter by the exposition management, the last installment of the return money being paid on the 15th day of November. The net amount appropriated in aid of the Exposition was \$6,579,000.

The agreement of the two houses of Congress in voting by overwhelming majorities to aid the Exposition with the loan of \$4,600,000 was an impressive demonstration of the interest taken by the national government in the success of the Exposition. It was not reached without very thorough consideration and discussion of the proposition. On the 27th of January 1904, the President of the Exposition, David R. Francis, Treasurer William H. Thompson and the chairman of the Committee on Legislation, Daniel W. Houser, started to Washington to ask this loan to be repaid out of the earnings. On the morning of the 29th the delegation submitted the matter before the Senate committee on appropriations. The urgent deficiency bill was about to be sent to the Senate from the House of Representatives. The Senate committee was asked to report the bill with an amendment advancing \$4,500,000 to the Exposition secured on the receipts. President Francis presented an argument for the amendment. The hearing lasted three hours. The subject was discussed exhaustively. Documents were presented showing the expenditures to date and the immediate needs of the Exposition. In reply to a question whether the Exposition would be willing to turn over one hundred thousand dollars of the loan for the use of the Board of Lady Managers, President Francis replied that it would be pleased to do so if an additional \$100,000 was included in the loan.

The \$4,600,000 Loan Repaid:

On the 1st day of February another extended hearing was given to the representatives of the Exposition by the house committee on industrial arts and exhibitions. Both President Francis and Treasurer Thompson arguing the merits of the proposition, the sufficiency of the security and the policy of the loan.

The Senate committee on appropriations without hesitancy and without a dissenting vote agreed on the 1st day of February to report the World's Fair loan amendment. On the 4th of February the bill including the loan amendment passed the Senate without a dissenting vote.

Opposition was manifested in the House. There was much debate. Those who spoke against the loan freely admitted the national character and the importance of the Exposition and the interest of the world in it. Opposition was based largely on scruples of law and policy. The opponents aligned that the proposed amendment constituted a bad precedent. Some declared they would rather vote an outright gift of the amount than a loan to be repaid. The friends of the measure were ardent and vigorous in support of it. On the 11th of February the House approved the loan amendment by a decisive vote of 172 ayes and 73 noes. On the 12th of February the bill carrying the loan of \$4,600,000 was sent to President Roosevelt for approval which followed on the 18th of February.

The terms of the loan provided for the payment of the money in installments, the first of which was payable on the passage of the bill. The other installments were 1,000,000 per month until May when the final amount of 600,000 was paid.

Secretary Shaw's Congratulations:

The law provided that the return installments should begin the 15th day of June and that installments should be paid on the 1st and 15th days of each month thereafter until the entire amount was returned to the United States treasury. The installments of June 15th and July 1st were percentages on the gross receipts. The monthly installments beginning July 15th were \$500,000 each. Every payment in strict accordance with the letter of the law was made, the final payment being \$191,850.81 on the 15th day of November.

The strict compliance with the letter of the law was acknowledged by the secretary of the treasury in the following letter:

TREASURY DEPARTMENT

Washington, November 18, 1904.

My Dear Sir - I desire to thank you and through you the Louisiana Purchase Exposition Company for the prompt payment of the government loan of four million six hundred thousand dollars, and to congratulate you all that you were able to make the payments promptly. I had great confidence in your ability so to do at the time the loan was made, and as you know recommended it, and while the small attendance during the first two months of the Exposition caused apprehension it did not cause alarm. In this connection let me also congratulate you all on having held the largest and the most comprehensive exposition ever installed, or that in my judgment ever will be installed. It has not only been a record-breaker, but it has established a record that will never be broken. With sincere personal regards, I am,

Respectfully yours,
(Signed) L. M. SHAW.

Honorable D. R. Francis, President,
Louisiana Purchase Exposition Company,
St. Louis, Missouri.

CHAPTER II

THE SALVAGE

Negotiations by a Committee—First Proposals Disappointing—Intramural Cars and Equipments Sold for \$159,750—Buildings, Railroad Tracks and Wiring Bring \$450,000—Art Building and Other Exceptions—What Foreign and State Buildings Brought—The Experience at Chicago

AT a meeting of the Board of Directors held September 27, 1904, the following resolution was adopted:

Resolved, That the resolution approved by the Board of Directors at its last meeting authorizing the appointment of a committee of three to take up the subject of the sale of salvage and to consider the subject of the restoration of the grounds for park purposes be modified, subject to the approval of the Board of Directors, so as to provide for two separate committees, of which the President of the Exposition shall be ex-officio chairman, to consist of five members each aside from the President, to be appointed by the President of the company; one of said committees to consider and report to the Executive Committee at as early a date as practicable a plan for disposing of the property of the company and the other committee to consider and report to the Executive Committee a plan for the restoration of the grounds to park purposes.

The Salvage Committee began its work early in October advertising for bids on the physical property of the Exposition company. These bids were opened on the 10th of November and were very disappointing. There were three of them, one for \$325,000 which was for all of the property of the Exposition and was not considered. The next bid was for \$70,000 for part of the property. There was another bid of \$50,000. All of these bids were rejected, and the Salvage Committee proceeded through correspondence and personal effort to obtain new bids. Members of the Salvage Committee gave their personal attention to the negotiations with contractors in the effort to stimulate interest and to increase the amounts offered.

The Exposition management had previously determined to except from the sale of the general salvage the Intramural cars and the Intramural equipment, the company having a favorable option to exercise for the sale of this property.

First Salvage Bids Disappointing:

Just before the close of the Exposition three new bids for the physical property were opened. One named a price of \$285,000; another from a contractor who had bid at the previous call increased the amount to \$101,000. The third bid was for \$420,000. Further time was requested by two of the bidders. This

time was given and one of the lower bidders put in a bid of \$300,000-\$101,000 for the buildings and \$199,000 for the railroad, wire and other property. The contractors who had bid \$420,000, which was more than \$100,000 above the next highest bid, were taken into a conference. They were told that the Intramural cars together with the equipment thereof were not to be included in the sale, a previous agreement having been made for disposition of this property on options. They replied that they had understood their bids did not include the cars and equipments. After prolonged negotiations and discussion in which the policy of the exposition Committee on Salvage was to prevent any misunderstanding and to obtain the largest possible amount for the salvage, the committee concluded to make this proposition to the highest bidder: that for \$450,000 the Exposition would sell all of the physical property, subject, however, to the approval of the Executive Committee and Board of Directors, certain exceptions such as Art Hall and its annexes and the Intramural cars, with their equipments to be made, and the condition to be imposed that all of the furniture and other property which could be utilized by the Exposition company in the post-exposition period should remain in the custody and use of the company as long as needed. This proposition was accepted by the Chicago House Wrecking company on the 30th of November 1904. It was submitted to the Executive Committee and approved by that body. The President was authorized and requested by the Executive Committee to submit the same for the approval of the Board of Directors. The Board of Directors adopted the following:

Sale to the Chicago House Wrecking Co.:

Resolved, That the attached contract between the Louisiana Purchase Exposition Company and the Chicago House Wrecking company in respect to the sale of the property of the said Exposition company therein mentioned be and the same is hereby approved, adopted and ratified, and the President and Secretary of this Company are hereby authorized, empowered and directed to execute on behalf of and in the name of this Company the said contract, and also the bill of sale mentioned therein, and also to accept for and on behalf of this Company the promissory notes and chattel mortgage mentioned in the said contract, and to provide for the delivery of the property therein mentioned, according to the terms of said contract.

The Board of Directors also adopted the following:

WHEREAS, The Board of Directors has this day approved, adopted and ratified a certain agreement entered into with the Chicago House Wrecking company in respect to the sale of the property of the said Exposition company therein mentioned and dated the thirtieth (30th) day of November 1904, and

WHEREAS, it is provided in said contract that the President or Secretary of this company shall be duly authorized and empowered to execute releases of the property secured by the chattel mortgage mentioned in said contract and as provided for therein and shall be duly authorized and empowered to receipt for and on behalf of this company all of the payments provided to be made under the terms of said agreement and to give full receipts and acquittances therefor in the name of this company, and shall be empowered to execute all instruments necessary to invest the President or Secretary of this company with full power to deliver to the said Chicago House Wrecking company the possession of all items of property released from the lien of the aforesaid chattel mortgage. Now, therefore, be it

Resolved, That the President or Secretary be and is hereby authorized and empowered to execute in the name of this company all releases of the property covered by the aforesaid

chattel mortgage; that the President or Secretary is further authorized and empowered to receipt for and on behalf of this company all of the payments provided to be made under the terms of the aforesaid contract and to give the full receipt and acquittance of this company therefor, and for such purpose the said President or Secretary is hereby empowered to execute all instruments necessary to carry out the provisions of this authority and to deliver to the said Chicago House Wrecking company the possession of all items of property released from the lien of the aforesaid chattel mortgage.

Under this action of the Board of Directors the agreement of sale to the Chicago House Wrecking company was prepared and executed.

Under this agreement the Exposition Company realized \$450,000 from the Chicago House Wrecking company, \$159,750 from the sale of the Intramural cars and equipments and smaller amounts from salvage previously disposed of, bringing the total to over \$613,000.

Among the exceptions made in the agreement with the Chicago House Wrecking company were the Art building and the wings thereof which cost \$945,849.45.

The General Service company's salvage which was the property of the Louisiana Purchase Exposition Company, amounted to about \$46,000.

Disposition of the Statuary:

The statuary was excepted from the sale. Sixty of the best figures and groups were preserved and placed in the permanent Art building. Others were loaned or given to the Lewis and Clark Exposition. Several cars were loaded with this statuary and forwarded to the inaugural committee in Washington for use in a Court of History on the fourth day of March 1905. Subsequently these figures and groups were given places in the parks of Washington. The statue of James Monroe was given to the University of Virginia.

The City of St. Louis preserved the statues of Joliet and of DeSoto and placed them in O'Fallon and Carondelet Parks.

The statues of Horace Mann, Daniel Boone and Pere Marquette were given to the school board of the City of St. Louis.

Figures of Music and Manual Training from the palace of Education, together with urns and the figures Transportation by Land and by Water were taken by the Central High School.

The statue of Joseph Henry was given to the Albany institute and Historical Art Society, of Albany, New York.

Distribution of decorative pieces was made to several clubs of the City of St. Louis.

The Dallas Fair Association received a collection of vases, several figures from the Mines and Metallurgy palace and entrance groups from the Liberal Arts building.

Cherokee Chief was placed in Compton Heights Park.

The Sale Successful:

Nothing developed following the sale of the salvage to change the opinion strongly expressed by the Board of Directors that the terms were exceedingly favorable from the standpoint of the Exposition company. Of course, no state

or foreign building or concession structure was included in the sale. Only the physical property of the Louisiana Purchase Exposition company was covered by the agreement. In addition to eleven exhibit palaces there were such structures as the Emergency Hospital, the Press Building, the Model Town Hall and the Intramural stations. At one time when the bidding dragged it was thought that possibly the Exposition Company would be compelled to do the wrecking either directly or through an organization formed by members of the Board of Directors. Estimates made of what might be realized by wrecking under such plans were not over \$350,000.

When the amounts realized for salvage in state and other buildings not owned by the company are taken into account the impression that the Louisiana Purchase Exposition company did well is strengthened. The United States government building of steel construction cost over \$330,000. The best bid and the one accepted for this building was \$10,500. The building of Canada cost \$35,000 and sold for \$1,015. The building of Belgium, of steel frame imported from that country, was erected at a cost of \$130,000. It sold for \$2,000 and was resold for \$3,500. Japan expended \$75,000 on the several buildings and the garden surrounding them. The entire property was sold at the close of the Exposition for \$500. The Michigan state building erected at a cost of \$12,000 brought \$1,200. The Rhode Island building cost \$26,000, was sold for \$2,500 and then resold for \$500. A restaurant structure which cost \$6,000 brought \$275. Another restaurant building not quite so elaborate sold for \$85. Many of the smaller structures sold for less than \$100 each and several were given away for the cost of removal.

The salvage receipts of the Chicago World's Fair, as shown by the president's report, were \$238,810.88.

CHAPTER III

DISMANTLING .....	662

Reduction of Forces—Removal of Exhibits—Efficiency of the System Demonstrated—The Bureau of Expedition—No Fires and Few Losses Strict Economics—Palaces Turned Over Promptly to the Wrecking Company

OFFICES of the Exposition company, including those of the President and of three of the executive divisions were at first established in the Laclede building, southwest corner of Fourth and Olive streets. On June, 1902, the offices were transferred to the Administration building on the exposition grounds. In March and April of 1904, the offices of the chiefs of departments of the Division of Exhibits were transferred to the respective exhibit palaces; the office of the director of exhibits remaining in the Administration building.

At the close of the Exposition the offices of the administration were removed to various convenient buildings upon the exposition grounds: the offices of the President, the secretary and director of works to the Hospital building, which was designated the Administration building; the office of the director of exhibits to the Press building, and the office of the director of concessions and admissions to the Model drug store in the Model Street.

An office of the Exposition company was retained in the Merchants Laclede building, the general counsel of the company occupying this office for some months after the close of the Exposition.

Withdrawal of Exhibits:

The work of dismantling the Exposition, particularly the interiors or the exhibit palaces, proceeded rapidly. Every possible aid was extended by employee of the Division of Exhibits in the various palaces to facilitate the work of removal consistent with the demands of economy, which required the immediate reduction of the entire working staff of the Exposition. An effective system covering the release, withdrawal and shipment of all material was inaugurated and successfully applied. The privilege of free transportation accorded by railroads to all exhibits was only available by exhibitors through conformance with the system employed by the exposition agencies. This provision, together with the employment of the exit pass and other precautions and facilities, rendered the procedure uniform, orderly, simple and safe as well as expeditious. Of the progress of the work of withdrawal of exhibits and the methods of expedition and protection employed Director of Exhibits Skiff reported:

During several weeks previous to the close of the Exposition preparations were made in all departments of the Division and by the bureau of expedition for the removal of exhib-

its. The work of dismantling began immediately after the closing hour on December 1st and was in full progress by the end of the next day. The limit of time allowed to exhibitors under the rules of the Exposition in which to effect the removal of all exhibits and facades was three months, or until March, 1906. Formal advices in relation to the section of the general rules and regulations bearing upon this situation were promptly conveyed to all exhibitors.

The removal of domestic exhibits proceeded very rapidly. But for the scarcity of cars and the inevitable congestion which confronted the agencies employed in the work of removal during the first weeks after the close of the Exposition, practically all domestic exhibits would have been withdrawn by December 31, 1904. The decision of certain exhibitors to retain their exhibits and facades in the exhibit palaces until convenient to forward them to the Portland Exposition was another though minor source of delay.

In the case of foreign exhibits, time was required in which to make entries and secure return certificates for the passage of these consignments through the agencies of the United States customs. The processes of this work, owing to the strict requirements of the custom laws and their faithful administration, together with the immense number of articles to be identified, entered and passed, was necessarily slow and tedious. Months were required for the completion of this task although the bulk of foreign exhibits were ready for removal and the greater proportion of them withdrawn by January 31, 1905.

The System of Removal:

Weekly reports were made by chiefs of departments to the director of exhibits showing the progress of the work of removal and indicating all causes of interference and delay. At frequent intervals a complete report of all exhibits in each palace with exact status of each in relation to packing, removal and reshipment was made. With the aid of this information, it was possible at all times to apply methods of expedition intelligently and directly. A system of accurate records was continuously kept by the chiefs in charge of exhibit palaces, which was of the greatest service in the work of hastening the packing and reshipment of exhibits.

During the period of withdrawal of exhibits every precaution possible with the limited force retained was practiced by all of the representatives of the division of exhibits in all exhibit palaces to protect the property of the exhibitors and of the Exposition Company. The guard service in the various buildings was necessarily reduced immediately after the close of the Exposition and steadily diminished thereafter. On January 27th the special detail of regular army guards assigned upon request for special protection, and which had been serving since the close of the Exposition, was withdrawn, leaving the greatly reduced staff of the Jefferson guard to serve. On February 1st the Jefferson guard was disbanded and replaced by shifts of private watchmen.

The employees of the Division of Exhibits in the various exhibit palaces worked faithfully to eliminate as far as possible danger of theft and fire under these conditions. The janitor force in each building was energetically applied in removing inflammable rubbish where exhibitors were not required to perform this service. During the entire period of the removal of exhibits this vigilance was not relaxed. The practical absence of theft, fire and loss of any kind was the reward of these efforts.

On December 31st the palace of Horticulture was reported as ready for transfer to the company which had purchased the Exposition company's property. The palaces of Forestry and Fish and Game, Electricity and Transportation were ready for similar transfer on January 24th, February 1st and February 16th, respectively. The palace of Machinery was transferred to the director of works on February 1st, and practically all exhibits except those of extraordinary dimensions had been removed at that time. The remaining exhibit palaces were practically cleared by February 28th. On March 1st they were transferred to the President of the Exposition company, with such exhibits as they still contained, jurisdiction of the Division of Exhibits over all exhibit palaces ceasing on that date.

Such accomplishment may be regarded as extraordinary. It was of the same character as marked the introduction and installation of exhibits and was effected by perfect organization, vigilant direction and capable performance. Five months was given to the exhibitors at the Chicago Exposition after its close, during which to effect the withdrawal of exhibits; and practically the same time was allowed at Paris. In neither case did the time prove sufficient. In view of these facts, the performance at St. Louis must be considered most satisfactory.

During the removal period, as during the period of installation, all of the agencies employed in connection with the withdrawal of exhibits, including the bureau of expedition, were located in one central headquarters where all of the preliminaries necessary to reshipment could be perfected; the building occupied during the withdrawal of exhibits was centrally located and excellently adapted to the purposes required.

Work of Division of Exhibits Completed:

As with the conduct of the entire operations of the Division of Exhibits, its affairs were closed with promptitude and completion of performance without precedent. By the end of February, almost before the exhibits were removed, the business of many of the departments was finished, the resignation of their officers and employees in, and their reports and records turned over for permanent preservation. By the middle of March, the majority of those departments remaining had closed their offices and affairs and by the end of March the disbandment was complete. This represents an extraordinary record, surpassing by many months that of previous expositions. Where all details of business were not complete, service, such as might be necessary, continued indefinitely and without pay. The erector of exhibits tendered his resignation of pay to take effect February 28, 1905, resignation of the duties of office not to be accepted until all details of the work of the Division of Exhibits were permanently closed. The resignation of chiefs of departments and other officers of the Division of Exhibits were made with like provision. Of the conclusion of the affairs of the division, Director of Exhibits Skiff reported:

Whenever possible, during the period of the Exposition, the working forces of the various departments were reduced. At the close of the Exposition this reduction was made general and radical, only indispensable employee being retained. Instructions were issued to chiefs of departments to the effect that the affairs of each department must be brought to a close by March 1, 1905, and detailed report of any matters remaining unfinished at that time made to the director of exhibits.

As the work of clearing up the buildings progressed the working force in each was further proportionately diminished, and the same operation was applied to the clerical help in the offices of the chiefs of departments. During December and more particularly January and February the pay roll of the Division of Exhibits was very low. The working staff of the office of the director of exhibits which had been greatly reduced at and immediately after the close of the Exposition was on February 28th practically entirely dismissed. This was true of the staff of all departments of the division.

When the operations of the office of a chief of department were brought to a close the property and effects therein, of which careful record had been kept, were transferred with inventory of same in each case to the director of exhibits and by him to the secretary of the Exposition Company for final disposition. All files of the division and its departments were transferred in similar manner.

Early in the year 1905 all of the records of the Exposition were transferred to the Art palace where they were stored, to be available for future reference.

The last work performed in connection with the exhibit section of the Exposition was the preparation and distribution of the diplomas and medals of award, which work was completed May 31, 1906.

Director Skiff's Tribute to His Staff:

It would have been impossible to accomplish such a tremendous task as the organization, construction, collection, installation, completion and perfection of such an exposition, as well as its operation and conduct during the open period, its prompt destallation and the conclusion of its affairs, without faithful and enthusiastic performance at all times and in all departments. That such performance was rendered and repeated and renewed upon all occasions it is a pleasure to record and the fact constitutes one of the significant elements in the development and history of the Exposition.

The personnel of the several divisions of the Exposition service could hardly have been improved. At the heads of them were men of experience and special ability. The same capacity and fitness extended down through the various departments of each division. In many cases the service rendered by officers and employees was extraordinary. Of the performance of the staff of the Division of Exhibits, Director of Exhibits Skiff wrote:

The work of the officials and employees of the division merits the highest commendation. In the office of the director of exhibits the services of Prof. Selim H. Peabody in various capacities and particularly as assistant to the director of exhibits were of peculiar importance and value. Prof. Peabody's scientific training fitted him well for the highest order of exposition work, in addition to which his exposition experience was extensive. His death, which occurred some months before the opening of the Exposition, was seriously felt by the Division of Exhibits and was generally and sincerely deplored.

The successor of Dr. Peabody, Edmund S. Hoch, had previously been connected with the office of the director of the division in several capacities. As assistant to the director of exhibits he had immediate charge of the office force and directed and supervised the general office correspondence, negotiations and procedure. He edited the special literature of the division; also the official catalogue of exhibits. He devised the exhibitor's pass system and supervised its operations. His services were of a high order, his discipline exceptional and his fitness for the important position so immediately manifest that the director relinquished to him many important and responsible functions of his office. He continued as assistant to the director of exhibits until the final report was submitted to the President, and during the latter months of the post-exposition period was in charge of by the affairs of the division.

In practically every instance and at all times the chiefs of departments and others in direction of important work of the division applied to the execution of their duties and the successful performance of the difficult and important tasks assigned to them an intelligence, energy, perseverance and fidelity, the equal of which is found only in men of the highest order and capacity. The scope of the work in many of the departments and sections was so comprehensive and in detail so complex that successful execution only followed upon the most untiring efforts and the application of consummate diplomacy and ability.

The minor employee in practically every branch of the work of the division gave faithful and efficient service. On frequent occasions the demands in hours and character of the work necessary to be performed were such as to constitute the severest tests of loyalty and perseverance. At all such times the response was of a nature so prompt and steadfast as to force commendation.

CHAPTER IV

PARK RESTORATION

Conferences With the Board of Public Improvements—Plans Agreed Upon—Obligations Under the Ordinance—Paved Roadways—The Art Building Accepted—World's Fair Pavilion—A Chain of Lakes—The Plantations

ON the 11th day of October 1904, almost two months before the close of the Exposition, the Board of Directors of the Louisiana Purchase Exposition company provided by resolution for a committee on restoration of the park. The committee was composed of David R. Francis, ex-officio chairman; Corwin H. Spencer, W. K. Bixby, James Campbell, Elias Michael, Charles H. Huttig; Walter B. Stevens, secretary.

The resolution required this committee to consider and report to the Executive Committee a plan for the restoration of the grounds to park purposes.

Frequent meetings were held. The services of George E. Kessler, who had been chief of the department of Landscape during the Exposition, were engaged. Plans were discussed at length and in detail.

On the 1st of November these plans had so far progressed that a joint meeting of the Executive and Restoration Committees was held. At this meeting the secretary was instructed to address a communication to the Board of Public Improvements requesting a conference between the Board and Restoration Committee, the time and place to be fixed by the Board of Public Improvements. As a result of the communication a conference was held on the World's Fair grounds the afternoon of November 7th. At the conference the President of the Exposition outlined the action of the Board of Directors of the Louisiana Purchase Exposition company in the appointment of a Committee on Restoration. He told of the meetings held by the committee and of the work done under the supervision of the committee by Mr. Kessler.

At the request of the President, Mr. Kessler laid before the conference a tentative plan for restoration to park purposes of the ground occupied by the Exposition. He explained at some length the plan to remove the buildings, except the permanent Art building, to construct lakes at the base of the Terrace of States, to lay out the lower level of the park with meadows and drives and to plant trees and shrubbery.

A discussion of considerable length ensued, members of the Board of Public improvements expressing their views. Removal of all buildings except the palace of Art and removal of the Intramural railway were strongly favored by members of the board.

It was suggested by the board that the plans as outlined by Mr. Kessler be presented formally to the Board of Public Improvements after they had received the approval of the Exposition company. Members of the board suggested that the plans show the proposed treatment of the Des Peres channel way.

The ordinance granting occupancy of Forest Park provided that the Exposition shall-

Within twelve months after the close of such Fair or Exposition fully restore the park selected as a site, or, in the case of Forest Park, that portion thereof above described, by doing all necessary grading, the restoration and repair, or the formation of all walks or roads, the planting of trees, the placing of sod and the planting of shrubs and plants, all in accordance with plans to be approved by the Board of Public Improvements, and all to be done subject to the inspection of the Park Commissioner, and to his entire satisfaction and approval.

As a result of the conference, the Restoration Committee instructed Mr. Kessler to prepare his plans in detail. These plans received first the unanimous approval of the Executive Committee and later the unanimous approval of the Board of Directors of the Exposition company.

On the 24th of January 1905, the Restoration Committee and the Executive Committee of the Exposition by appointment waited upon the Board of Public Improvements and presented the several plans showing the suggested scheme of restoration as to grading, roads, lakes and plantations. These plans were discussed by Director of Restoration Kessler with the Board of Public Improvements. They received formal approval. The work of restoration progressed steadily under the direction of Mr. Kessler and his superintendent, D. W. C. Perry. Portions of the park were restored to public uses as rapidly as buildings could be removed and roads put in condition. Fences were removed from the entire south line and from the greater part of the east and west lines of the park.

When the contract of sale of salvage was closed, November 30, 1904, a copy of the ordinance fixing the tenure of the Exposition company in Forest Park was in possession of the Chicago House Wrecking company. Contemporaneously with the negotiations of the sale the following clause of the ordinance was a subject of discussion between the representatives of the Exposition and the representatives of the Chicago House Wrecking company:

Within six months after the close of said Fair or Exposition, the corporation or association aforesaid shall clear the park, or in the event of the selection of Forest Park, the part thereof above described, of all tramways and railway tracks, rubbish and debris, and of all buildings, sheds, pavilions, towers and other structures of every kind, and shall within twelve months after the close of such Fair or Exposition fully restore the park selected as a site, or, in the case of Forest Park, that portion thereof above described.

The Chicago House Wrecking company expressed the opinion that the demolition and removal of buildings could not be entirely completed within the time specified by the ordinance. Members of the Salvage Committee individually expressed their willingness to go before committees of the Municipal Assembly if the Chicago House Wrecking company found it a physical impossibility to remove all of the construction and decided to ask for an extension of time. Members of the Salvage Committee who volunteered this assistance were also members of the Grounds and Buildings Committee, and they realized the enormous magnitude of the construction and the task involved in the wrecking, but in offering assistance in a movement to extend the time the committee insisted

that the work must be prosecuted with "reasonable dispatch" and so provided in the contract.

The Exposition company made every effort to comply with the requirements of the ordinance to restore the park within one year after the close of the Exposition. At the time the ordinance was framed the full scope of the Exposition, the participation of all sections of our own country and of so many foreign countries, was not realized in the most sanguine expectations. So rapidly did the plans expand that it became evident in 1902 that the Exposition could not be held in 1903, as was contemplated in the ordinance, consequently the consent of Congress was obtained for a postponement until 1904. The ordinance granting the use of a portion of the park, as originally framed, should have made provision for a longer time in which to clear the ground of structures and restore it for park purposes.

Just before the expiration of the twelve months, in November 1905, the Exposition company submitted a proposition to the City of St. Louis to meet the park restoration obligation with the payment of a sum of money. This was not accepted. City officials admitting that one year was inadequate for the great work to be done held to the opinion that the restoration could be accomplished more satisfactorily if performed by the Exposition company.

The Exposition company continued the work of restoration until September 1908. A comprehensive showing of what was done is set forth in the report of Director of Restoration Kessler:

During a considerable part of the nearly three years of work of restoration, the Restoration department carried over fifty teams and over one hundred men. The department has utilized all of the help that could be utilized effectively. The pay roll of this department ran as high as \$13,000 a month for a part of that time. All that was contemplated in the beginning has been done. Many improvements which were not foreseen and as the work progressed it appeared would add to the beauty and utility of the park have been provided.

In formally notifying you of the completion of the work I wish to place upon record my judgment that the City of St. Louis will receive the western half of Forest Park with improvements and betterments which fairly represent \$600,000 of cost. In this estimate are not included the great Art building of stone and steel and the statue of Saint Louis.

The roads constructed under the plan of restoration were:

Forty feet wide	18,429	feet,	3½	miles
Thirty feet wide.....	4,027	feet,	¾	mile
Plaza in front of Art building.....	525x60	feet,	¼	mile

These roads were graded and built entirely anew. The roads which did service in the northern part of the grounds during the World's Fair were removed. They conformed to building lines and could not be used in the plan of restoration.

The plan of roadway approved by the Board of Public improvements did not specify that the roads were to be paved. Previous to the World's Fair there were no paved roadways in this part of the park north of Art Hill. As the work of road making progressed the Executive Committee instructed that the roads be paved, the material from the roads removed being utilized for this purpose. As a result, there has been put down over 100,000 square yards of street paving. This is standard park road paving from ten to twelve inches thick with top dressing of gumbo.

At the usual prices paid for such road paving, this item alone would represent \$100,000.

The paved roadways above referred to are in the northern section where the exhibit buildings stood. The southern heavily wooded section was thrown open to public use in April 1905. At that time the roadways, between five and six miles in length, were in perfect condition. They have been in continuous use. From time to time the Restoration department has made repairs upon them.

Altogether the paved roadways which remain in the World's Fair grounds amount to about nine miles, all of which with the exception of about one mile and a quarter were built by the Exposition company, either before or since the Fair. They are where their value as permanent improvements can be seen at a glance. At moderate estimate of such work they represent a cost of \$158,000.

For the convenience of those visiting the Art building, a pathway twelve feet wide and one-half mile long has been graded and graveled, crossing the lagoon on a rustic foot bridge.

It is only proper to include among the items of permanent improvement of the park the grading of Skinker Road. This was done by the Exposition company, leaving that road in a condition for permanent improvements at a cost of \$8,052.30.

When the Exposition company took possession of the western part of Forest Park there were two iron bridges: one of these the Washington bridge, a substantial structure, was removed at the request of the park commissioner to a new location in the eastern portion of Forest Park, the Exposition paying the cost of such removal and reconstruction, \$2,064.

The Exposition company also paid, as the records show, for other permanent improvements in the eastern portion of the park. These improvements included the construction of a concrete arch bridge over the channel of the River des Peres on Grand Drive at a cost of \$13,364.00; the construction of the park stable bridge at a cost of \$815.00; the construction of water works bridge in the park at a cost of \$1,196.00. The second iron bridge was utilized in the water works bridge.

The Exposition company, as the record shows, paid for improving and straightening the channel of the River des Peres east of the boundary of the World's Fair grounds, in the old part of the park, \$6,172.72. The Exposition company put in piping east of the boundary at a cost of \$534.43. Altogether these expenditures on bridges and permanent improvements in the old part of the park east of the World's Fair line cost the Exposition company \$24,145.15.

In the part of the park restored, the Exposition company has constructed a substantial wooden bridge of good design across a connecting lagoon in the lake system and has constructed a foot bridge for the pathway leading to Art Hill. The Exposition has also constructed a substantial wooden bridge across the lagoon leading to wooded island, and is leaving in place a second bridge on the opposite side of wooded island to remain, if desired by the city. Four bridges of particular design, having concrete abutments and iron superstructures with the exception of the flooring, were built at the principal crossings of the River des Peres.

The Exposition company has also put in a wagon bridge across the drainage ravine from the Mining Gulch.

By entirely new excavation and by using to some extent World's Fair waterways, where the lines could be made to conform to park plans, the lake surface has been considerably increased. There has been created a chain of five lakes, with a wooded island, and connecting lagoons. From the northwest beginning to the southeast overflow this system is a distance of about one and a half miles of waterway.

On the lower plane, where the main picture was, the Restoration department has cleaned, graded and grassed two hundred acres of meadows. This work necessitated the hauling away of many thousand wagon loads of debris which would have interfered with grass growing.

We have also established lawn surfaces over one hundred acres of the wooded por-

tion, where the state and other buildings were located.

Before the World's Fair closed in 1904, the Landscape department began the saving of trees and shrubs. It should be mentioned that the sale of the salvage of the Exposition company exempted all roadway material except brick, and all trees and shrubs. A nursery of thirty-five acres was established in the valley south of the Art building. There the Restoration department preserved and cultivated 75,000 trees and shrubs. As the work of restoration progressed, trees and shrubs were transplanted from the nursery to the permanent plantations shown in the plan of restoration. These trees and shrubs represent a value of fully \$25,000.00 in the nursery.

When the Exposition company received the western part of the park from the city there was no underground drainage system. The Exposition company put in a system for sanitary purposes and a sewer system for the carrying of surface drainage. Both systems were of permanent vitrified pipe and were well put in, so that they remain in excellent condition for service. In fact, most of the piping in both systems is now in active service. The drainage system is properly connected with the road and surface drainage. Wherever essential we have connected the surface drainage with the underground system, putting in permanent connections with catch basins and gratings. All of this is in the nature of permanent and necessary improvement of the park.

There was no water system in the western part of Forest Park when the Exposition company took possession. The Exposition company returns to the city the western part of the park with a general system of water pipe installed and well equipped with field hydrants in working order.

The theory of the plan of restoration was to preserve all of the beauty of this part of the park, and to give by meadows and arrangement of plantations the effect of broad, long vistas. This plan of restoration has worked out satisfactorily. It gives to Forest Park an impression of distances and of magnitude that the old park did not possess. Your director is confident that as the years go by the visitors to the park will approve the judgment which leaves these vistas open. Certainly there are no more impressive park views in the country than those afforded from Art Hill to the northward, and from Government Hill to the north and westward across the broad meadows, the lakes and lagoons and plantations, to the encircling sky line of the city.

When the Restoration department had completed the work called for in the original plans the city government expressed a desire for the construction of a pavilion on Government Hill near the site of the Missouri building which was destroyed by fire just before the close of the Exposition. The request was submitted to the Board of Directors and was complied with. The pavilion, of massive construction, was built at a cost of over \$40,000 and presented to the city.

CHAPTER V

THE STATUE OF SAINT LOUIS

A Memorial of the Exposition Presented to the City—Ceremonies on Art Hill—Presentation Address by President Francis—Acceptance by Mayor Wells—The Unveiling—A Magnificent Civic Pageant

ON the 4th of October 1906, the Directors and officials of the Louisiana Purchase Exposition company, the unveiling party, the contractor for the statue of Saint Louis, Captain W. R. Hodges, and invited guests met in the Art building. At 2:15 p.m. those present formed in line and proceeded to the platform in front of the Art building and facing the statue. The President of the Exposition was escorted by William H. Lee, chairman of the Committee on Ceremonies. The unveiling party consisting of Miss Jane Howard Wells, Miss Isabel Wyman, Mrs. Rolla Wells and Mrs. David R. Francis were escorted to the stand adjacent to the statue.

An introductory programme of music was rendered by Well's band.

The procession, upon reaching Kingshighway, entered Forest Park, and passed along the North drive to the Lindell pavilion. At this point connection had been made with the new system of roadways in that portion of the park occupied by the Exposition. The procession moved over the new roadway leading westward past the north lagoon and the lake at the foot of Art Hill. Before reaching Art Hill, the column was halted; Light Battery A moved into action on the left. The Mayor and his immediate escort advanced up Art Hill to the platform.

At 2:45 p.m., the chairman of the Committee on Ceremonies called to order an immense assemblage of people and introduced David R. Francis who said:

More than eight years have elapsed since the inauguration of the movement commemorating the one hundredth anniversary of the Louisiana Purchase; nearly two years have passed since the close of the Universal Exposition of 1904 held to commemorate that great event.

The difficulties that confronted the projectors of the enterprise in its inception, the doubts and forebodings of those who for various reasons opposed the project, the obstacles that beset the pathway of the undertaking at many stages of its progress are nearly or quite forgotten, but if remembered at all are treasured not for the purpose of resentment or unforgiving recollection, but as features which lend luster to an achievement made the more glorious by its ambitious proportions.

It is not necessary to recount the labors attending the accomplishment of the work; it is impossible to estimate the comprehensive material benefits that follow its course; it would be useless to attempt to paint in words its artistic beauty. It needs no monument in brass or stone to perpetuate it in the memories of even the casual or unobserving visitors who entered its gates.

Test of Success:

Time is the best test of merit. Viewed from the standpoint of today the exposition which closed nearly two years ago was a success. The estimation in which it is held by the people of St. Louis is constantly manifested in word and deed. The material progress which the city has enjoyed and is still reaping has put at rest the fears that were expressed concerning a commercial or financial reaction. The only regret experienced is that the operation of the Exposition could not have been continued through another year. Its beauties seem to have grown in the memories and in the hearts of the people of St. Louis as the time of their existence recedes. The planning of expositions in other cities at home and abroad indicates the appreciation in which the St. Louis Exposition and its results are held in other communities and in other countries. The federal government, which extended its timely aid at a very trying stage in the progress of the work, was gratified if not surprised when the obligation thereby imposed upon the management was fully and promptly discharged. The loan of \$4,600,000 made by the Congress in February 1904, was returned to the government treasury in the amounts and at the time fixed, and the entire debt paid before the close of the Exposition.

The Directors of the Exposition, who on more than one occasion generously and patriotically assumed responsibilities and made guaranties which they would have been willing to meet at great personal sacrifice, have all been released or ample provision made for their protection. The character of the exhibits and the field of competition are well attested by the value in which the awards are held throughout the civilized world. The permanent form in which the Exposition company is giving to the world of letters the proceedings of the International Congress of Arts and Science will ever be considered a marker of the thought of the age.

All of these inestimable benefits are the results of the earnest work and hearty co-operation of a comprehensive and compact organization, every branch and all members of which are entitled to unstinted credit. Without that co-operation and without an interest in the work which surpassed and was higher than the compensation received, no success could have been achieved. If the supremest pleasure one can enjoy is the satisfaction of duty well performed, then great gratification should be experienced by the directors, officials, heads of divisions, chiefs of departments, and all of those under them, whose self-sacrificing labors contributed toward the success of the work.

Site of Statue:

The St. Louis World's Fair marks a new epoch in the history of the city, state and country in which it was held, and a new era in our relations with other countries.

This reproduction of the equestrian statue of Saint Louis in the massive proportions that delighted the millions of spectators who viewed it in the Plaza of St. Louis has been erected to mark the site where were congregated the representatives of the thought and progress of all ages, and where were assembled in friendly rivalry the choicest products of the brain and brawn of man. It is presented to the City of St. Louis in appreciation of the interest manifested and the support rendered by the municipal government and by all the people. This spot was selected for its location and is eminently fit. Here it is in front of the palace where were exhibited so many invaluable works of art, and the only permanent building of the thirteen stately structures which were erected. It overlooks the scene of the incomparable picture whose beauty entranced millions, and which was at once a poem and a song. This noble monument and this magnificent palace of art should form, it would seem, a fitting climax, and a rounding out of the task which has consumed eight years of time filled with increasing and unselfish labors and has had the good-will and material support of city, state and nation.

This gallant crusader whose name our city bears, panoplied in material attire, and

holding aloft his inverted sword, forming the cross-the cause to which he devoted so much time and treasure and effort-might be regarded as typifying that period in the history of the Louisiana territory during which its early settlers braved the dangers and hardships of frontier life, and by courage and sacrifices advanced the outposts of civilization, felling the forests, tilling the soil, establishing homes and extending commerce. Right well did they perform their duty. It was a glorious heritage they left us. The Universal Exposition of 1904 portrayed not only the world's progress in science and all the arts, but demonstrated what contributions had been made to the advancement of civilization by this productive section through a hundred years of republican government.

The diplomas issued by the Exposition, artistic in design as they are, and beautiful in execution, contain the figures of two maidens; one represents France, who is transferring to her sister, Columbia, a robust, clear-eyed maiden in her first youth, the empire of the Louisiana territory, whose acquisition we celebrated; Columbia, while receiving the territory with one hand, holds in the other a torch of enlightenment which she is passing to a youth, who with winged feet stands ready to depart on his mission of civilization toward the western sun.

Our Future Duty:

Our work will not be completed if it should end with the erection of this building. From this point, however, the task should be taken up not by the Exposition management alone, but by all the people of St. Louis. We should fall to gather the best fruits of the Exposition, and the labors of its projectors and builders would not be satisfactory or thorough if all should end here. The best results of the Exposition are educational. The impetus it gave to the culture of this city and section, its broadening and elevating influence upon the minds of those who saw and studied it are worth more than all the material benefits that have flowed from it. If we should stop here and fall to make effort to gratify the taste that has been cultivated; if we should cease to continue to live up to the standard that has been established, we should be negligent and culpable. The century whose rounding out we commemorated is but a short span in the history of civilization and in the life of many communities. The Exposition enabled us to take advantage in a remarkable degree of the work of centuries by other countries in the cultivation of a taste for the beautiful and in the promotion of art.

Progress in those lines, as in all others, never ceases, and it is now incumbent upon us to do our share in promoting that progress. Every community is better from every standpoint if it has a love of the beautiful and an appreciation of art. In the capitals and in all of the larger cities, and in many of the smaller ones in Europe, there are open squares and parks in the heart of the population which are easily accessible by the people. Thoroughfares and boulevards are not only kept in excellent condition but are embellished by monuments and arches which add to the pleasures of the living, perpetuate the memories of great men, immortalize glorious achievements and inculcate civic pride and patriotism.

Art in Other Countries:

There are art galleries filled with paintings and sculpture and tapestries, which are open to the people free of charge, and maintained in many instances out of the public treasury; in these the poor as well as the rich cherish a proprietary interest. All classes thereby are encouraged to appreciate art, and in consequence are more content and make better citizens.

The commercial status of St. Louis is well established and is assuming larger proportions from day to day. The private residences of this city elicited the admiration of all strangers who came within our gates during the Exposition. More people in St. Louis own their homes than is the case in any city of its size in this country or in Europe. We have

not, however, enough attractions in the way of parks or monuments or museums for the edification of our own people or to hold the interest of our guests. Parks and open squares and boulevards should be established and constructed by taxation of all the people, as all the people are at liberty to enjoy them. In other countries museums are founded and maintained, monuments erected, and even opera houses built and operated by taxation or out of the state treasury. This palace of art, erected at an expenditure approximating \$1,000,000, should be made a lasting monument of the Exposition. Sufficient money should be raised by private subscription to renovate and enlarge it and make it a fit receptacle for whatever works of art may be presented to it in the years to come. It should be thrown open to the public at least six days in the week, in order that all the people may enjoy its educational benefits and its refining influences. The taxable property of the city should pay for its maintenance, and there is no question in my mind as to the people being willing to vote a sufficient tax for that purpose if the subject is properly presented to them. A subscription of at least half a million dollars for such renovation and enlargement should be secured within the next twenty days, and a commission appointed to devise a plan for the expenditure or investment of the fund. That commission, or another to be created by the subscribers or by city ordinance, should be given power to perpetuate itself and be entrusted with the care of the building and its contents.

There is already assembled within yonder walls such a collection of works of art as will interest any connoisseur. It comprises the best collection of American sculpture to be found in this or any other country, and there are paintings by some of the foremost artists of the times. The enjoyment the people derive from this source at this time is demonstrated by the numbers in which they visit this building, remote as it is from the lines of cheap transportation. It is no unusual thing for 25,000 people to cross the threshold of this Art palace on Sundays when the weather is not inclement.

The Art Museum:

Up to this time the building has been maintained at the expense of the Exposition company but has been open at practically all times for the use or edification of the people. The maintenance of this building, however, by the Exposition company for the benefit of all the people is no change in the policy pursued by that company from its organization to the present time. Neither you, sir, nor the public of St. Louis need to be reminded that all the work performed, and all the responsibilities assumed by the Directors of that company have not been inspired by selfish motives but have had for their object the good of St. Louis and the promotion of the welfare of her people. The exposition management, I am sure, will be willing to make whatever disposition of the structure will come nearest to meeting the needs of the people and contribute most to their education and culture. That refined taste for art, and that higher appreciation of the beautiful which the Exposition engendered, should be encouraged and cultivated. The torch of civilization which Columbia handed to the youth of 1803 has shed its light over the entire Trans-Mississippi section, but the typical youth to whom it was committed has not run his race, nor will he ever do so as long as the people in the territory comprised in his mission grow in knowledge and broaden in culture as they have within the past half decade.

In conclusion, Mr. Mayor, I deliver to you for the City of St. Louis this magnificent monument. The Exposition company is confident that it will be preserved with patriotic care for ages to come. May it quicken the civic pride of our people and serve as an incentive to greater undertakings and grander achievements.

You have been chief magistrate of this city since the organization of the Exposition company. Throughout its vicissitudes and labors, you have always extended to the movement your helpful personal encouragement and all the official assistance permitted by your unselfish devotion to duty or sanctioned by your high standard of public service. The Exposition management makes its acknowledgments to you, to all the members of your admin-

istration and to the municipal assembly.

Into the keeping of the municipal government of St. Louis, as the property of the people, I confide this superb statue of our patron saint.

As President Francis pronounced the concluding words of his address, "into the keeping of the municipal government of St. Louis, as the property of the people, I confide this superb statue of our patron saint," he signaled the unveiling party. Miss Jane Howard Wells stepped to the front of the platform and drew the cord which unveiled the statue. As the great white covering dropped slowly to the ground uncovering the grand bronze figure and the massive granite pedestal, Well's band began the Star-Spangled Banner and Battery A fired the first of the twenty-one guns. Heads were uncovered and a mighty cheer swept over Art Hill, down the terrace and along the line of the parade.

Mayor Wells' Acceptance:

When quiet was restored Mayor Rolla Wells spoke as follows:

The vigorous and hearty cheers that we have indulged in, resulting from the unveiling of the magnificent statue now exposed to our view, are the echo of the sentiment and opinion of every citizen of the City of St. Louis that the Louisiana Purchase Exposition was conceived in wisdom and consummated in success.

Almost two years have passed since the closing of the exposition gates, and it is evidenced on every side within the boundaries of the City of St. Louis that it was not held in vain; that the generosity of the people that made it possible was not misplaced; that the management and organization that brought it to such a successful ending were of the highest order.

Mr. President, this commemoration statue, which you, representing the stockholders of the Louisiana Purchase Exposition, have just presented to the City of St. Louis, will be a monument of remembrance to generations to come of the able and disinterested part that you and your co-workers have taken in the production of an Exposition never before equaled.

It is my grateful privilege, Mr. President, on behalf and in the name of every inhabitant of the City of St. Louis, to accept this token of your public spirit and civic pride, and well may we all, as long as time permits, look upon the statue of Saint Louis as our most cherished work of art.

While the dedication of the statue of Saint Louis was the absorbing event in the celebration, the day was made memorable also by the magnificent civic parade attending the exercises.

It was pronounced one of the most remarkable parades of the kind ever seen in St. Louis. The unanimous verdict of those who saw it was that the representation offered by the city, the post office and the police department did much to emphasize the importance, greatness and growth of St. Louis.

More than 7,000 men were in the column, which was four and one-half miles in length, and which was almost two hours in passing the reviewing stand on Art Hill.

The post office department alone contributed about 1,500 men to the spectacle. Six hundred mail carriers appeared in the regulation uniforms, while 700 clerks of the various offices were neatly attired in black trousers and soft white shirts. The men walking seven abreast kept perfect step.

The procession was headed by a platoon of seventy-five mounted policemen, followed by 600 officers on foot. The police division was led by Chief Creecy, who

appeared for the first time as commander of the department in a dress parade.

A platoon of twelve mounted police cleared the way for the procession. Mayor Wells had left the column at the park entrance in order to attend the preliminary exercises. When the procession passed the reviewing stand Colonel E. J. Spencer, the grand marshal, was at the head, accompanied by his chief of staff, Major J. B. O'Meara, and the aids to the grand marshal.

Then, in the order named, appeared Seymour's First Missouri band; First Regiment of Infantry, National Guard of Missouri; Battery A, Light Artillery; Grace Presbyterian Church Drum and Bugle Corps, and the Naval Reserves of Missouri.

The St. Louis post office department, led by Postmaster Frank Wyman, made up the second division; the police department, headed by Chief Creecy, the third division, while the various city departments, including in all nearly 4,000 men, filled the remaining eight divisions.

Various unique floats, many of them picturesque, were contributed by the city departments. The fire department offering its various equipments made a splendid showing.

It was nearly 6 o'clock when the last division of the column passed. Colonel Spencer rode up to the Mayor and reported that the parade was finished.

"And you are to be congratulated," said the Mayor.

President Francis also tendered his congratulations. For the few minutes following Mayor Wells and President Francis found themselves the principals in an informal reception.

The parade had filled the spectators with the greatest enthusiasm. The appreciation of the stupendous work of the city's operation was manifestly enlarged by the spectacle, which Mayor Wells, through Park Commissioner Robert Aull who had charge of the municipal section of the civic display, had successfully promoted.

CHAPTER VI

JEFFERSON MEMORIAL

Action by Congress—The City's Stipulation—Purposes of the Incorporation—Evolution of the Plan—Appropriateness—A Storehouse of Louisiana Purchase History—Missouri Historical Society Collections—Corner Stone Ceremony

IN the winter of 1909, the President of the Exposition appeared before the Committee on Appropriations of the House of Representatives at Washington and also called upon members of the Senate with reference to a settlement of the financial relations between the government and the Exposition company. He submitted the proposition of the Louisiana Purchase Exposition company that the interest of the government in any surplus that might remain be devoted to the erection of a monument to Thomas Jefferson. The proposition was well received. Before adjournment the 60th Congress incorporated the following in the Sundry Civil act:

Section 5. The Louisiana Purchase Exposition Company is authorized to expend not to exceed \$150,000 out of the amount which may be due the United States under the Act of March 4, 1901, in the erection at St. Louis, Mo., of a monument to Thomas Jefferson in commemoration of the Louisiana Purchase.

Provided, that the City of St. Louis and said Exposition company jointly contribute an amount at least equal to that used from said fund due to the United States as aforesaid toward the erection of said monument, and the total amount of expended shall not be less than \$200,000, exclusive of site, and the use of any funds of the United States as herein authorized shall finally discharge the United States and the government of the Philippine islands from all claims of every character whatsoever by said Louisiana Purchase Exposition company.

The City of St. Louis not only contributed \$5,000,000 to the World's Fair but granted the use of half of Forest Park to the Exposition company. Following the action of Congress as set forth in the section quoted the Board of Public Improvements of the City of St. Louis stipulated that as a part of the plan of restoration of the park the Exposition company should erect a monument to Thomas Jefferson to cost not less than \$200,000.

The Louisiana Purchase Exposition company through the Board of Directors formally accepted the proposition of the United States government and filed an agreement to abide by the action of the Board of Public Improvements. In this way the government, the city and the company were committed to the Jefferson Memorial.

The idea of a Jefferson monument in commemoration of the acquisition of the Louisiana Territory was not new. More than a quarter of a century ago the late James G. Blaine in an address at St. Louis told the business men of the Merchants Exchange it was a reproach to this great section of the Country that

no monument to Jefferson had been erected to commemorate the acquisition of the territory. The words of Mr. Blains were: "Your growth, gentlemen, is the growth of the republic, but I feel I have one reproach against the Trans-Mississippi department. My reproach to every foot, to every inhabitant of the territory of Louisiana, is that on its surface, which represents a third part of the United States, there is not a statue raised to Thomas Jefferson."

In 1899 the Louisiana Purchase convention was held in St. Louis. Every state and territory in the Purchase was represented by delegates, representative men, who had received credentials from their respective governors. The convention was called to consider and determine the most appropriate form of observance of the approaching centennial of the acquisition. The delegates declared by unanimous vote in favor of a World's Fair, but throughout the proceedings the sentiment was marked that in some way there should result from the World's Fair an enduring monument to Thomas Jefferson. Mr. Francis addressed the convention by request, giving voice to the sentiment in these words:

It is to the shame of the wealth and culture of the Louisiana territory that nowhere within its broad confines has there been erected a monument to Thomas Jefferson. On the campus of the University of Missouri, at Columbia, stands the unpretentious shaft designed by Jefferson to mark his last resting place. It bears the inscription prepared by him: "Here was buried Thomas Jefferson, author of the Declaration of independence, of the statute of Virginia for religious freedom, and father of the University of Virginia." It was removed from Monticello in 1885 after a more fitting obelisk had supplanted it. Thomas Jefferson needs no monument to keep his deeds fresh in the minds and hearts of his countrymen, but they owe it to themselves to show their appreciation of his worth. Wherever and however the work of this great American may be celebrated - and I take it for granted that we will not permit its centennial anniversary to pass unnoticed - let us mark the completion of the first century of republican government west of the Mississippi by the erection and dedication of such a structure, monument or museum, or library, or gallery of art, or institution of learning, as will demonstrate the estimation in which we hold his grand accomplishment and the incalculable benefits that have flowed therefrom.

With the completion of the Jefferson Memorial the Louisiana Purchase Exposition company fulfilled its obligations to the United States government and to the City of St. Louis. The corporation accomplished the objects for which it was given existence by a special act of the Missouri legislature. The incorporation of the company was authorized by the legislature for the following purposes:

First, to inaugurate and hold national, international or world's fairs, centennial and other expositions; second, to promote and encourage literature, history, science, information, or skill among the learned professions, intellectual culture in any branch or the establishment of museums, libraries, art galleries, or the erection of public monuments commemorative of state or national historic events or persons, or for all of said purposes; third, In general, to promote, establish and maintain any institution or organization which tends to the public benefit in relation to any or several or all of the objects above enumerated, and whatever may be incidental thereto: Provided, that the powers conferred by subdivision second and third of this section shall not be exercised by any corporation organized under this article unless the main purposes of the organization of such corporation shall be those specified in division first of this section.

This language of the act was used in the petition for incorporation signed by a large number of leading stockholders who were not the present directors of the Exposition company. The incorporation was granted with all of these provisions. The company would not have performed its full purpose if it had stopped with the World's Fair.

Evolution of the Design:

The perfected and approved plans for the monument represented eighteen months of careful consideration and labor by the Executive Committee of the Exposition, by Director of Works Issac S. Taylor, Chief of Sculpture Karl Bitter, and Landscape Architect George E. Kessler. Design after design was made and considered. The Executive Committee devoted many meetings to the subject. Conferences were held with the Mayor, the Board of Public Improvements and other municipal officials. Consideration of the form most appropriate to the character of Jefferson and most fitting to commemorate the Louisiana Purchase led by a process of evolution to the plan adopted. Arches were sketched and discarded. Jefferson was not a general of armies. He was not distinguished for oratory. Therefore, the committee quickly disposed of two of the most common forms in monumental design - the man on horseback and the orator making a speech.

Jefferson was a scholar, a writer, a maker of serious history. Upon two deeds of the pen rest his everlasting reputation in American history - the Declaration of Independence and the Louisiana Purchase. There are oil portraits of Jefferson, there are several marble or bronze figures of Jefferson. Nowhere in this broad land is there a monumental structure to commemorate the man and his deeds - to symbolize his spirit.

It is not difficult to trace the reasoning by which committees and experts reached the conclusion that this Jefferson Memorial should stand for something more than architecture and art; that it should perpetuate in a living institution the memory of Jefferson. This is precisely what the adopted plans have accomplished in the judgment of those who have given most thought to the subject.

It would have been a great mistake if the World's Fair of 1904 had passed into history and left only a memory. Through its exhibits, its conventions, its celebrations, the Exposition was primarily a revelation of the Louisiana Purchase territory to the rest of the United States and to the world at large. It opened our own eyes to the important part we have performed in the making of the nation. Singularly the Louisiana territory has furnished the duplicate in number of the original thirteen states, but how much larger are these thirteen states of Louisiana! Jefferson's purchase doubled the then area of the country. We owed it to our generation to preserve in detail, in its entirety, the history of the Louisiana territory from the colonial settlements down through the territorial period and through the making of these thirteen states. We owed it to future generations to house our own historical literature and official records and relics in such worthy surroundings that they might be always accessible.

Corner Stone Laying:

The corner stone of the Jefferson Memorial was laid on the 1st of May 1911, in the presence of the mayor and officials of St. Louis, Directors of the Exposition, trustees of the Missouri Historical Society, and the public. The President of the Exposition, reviewing the World's Fair and its results, said:

Thirteen years ago this month, a meeting was called in the rooms of the Missouri Historical Society, Sixteenth and Locust streets, to confer as to a befitting manner of celebrating the centennial of the Louisiana Purchase. It was composed of five representatives from each of the then commercial and social organizations of the city of St. Louis. That was the beginning of an undertaking, the magnitude, the comprehensiveness, the widespread influence and the lasting results of which were inadequately estimated if approximately conceived by its originators. Throughout the intervening years has gone on work of preparation, of operation and of liquidation of an international exposition participated in by forty-odd states of the American union, by the general government and by every civilized country on the globe.

To all who participated as projectors, promoters, designers, builders, operators, advisers or administrators, it has been a labor of love. Faithful discharge of a trust gives gratification and pleasure to him who performs it. Successful achievement receives and merits the commendation of all fair-minded men. When the undertaking is stupendous, the responsibility is great, the duties onerous and exacting; the risk is proportionate, and the consequences of failure are serious and far-reaching. When the outcome is satisfactory, the effect beneficial and the influence uplifting, the accomplishment of such results is of itself ample reward for an unselfish ambition.

The event in our country's history the St. Louis World's Fair was held to commemorate was the most important after the formation of our Government. Without the acquisition of the Louisiana territory, the independence gained through the unselfish patriotism of Washington, the union formed through his wisdom and influence and cemented by the ability and statesmanship of Hamilton and Madison would not have survived and flourished.

Author of the Declaration of independence, founder of the University of Virginia and framer of the statute of Virginia for religious freedom were the great accomplishments which Thomas Jefferson directed should be inscribed on the monument which for sixty years marked his grave at Monticello. That unpretentious shaft was removed to Missouri in 1886 and has since stood on the campus of the State University at Columbia - an inspiration to the youth who frequent the halls of that great institution and a shrine fit for the worship of all who love American institutions. No other monument to Thomas Jefferson was erected within the confines of the vast empire which he added by peaceful negotiation to our public domain, until the people of every race, every tongue, every faith and every clime and the official representatives of republics, tribes, monarchies and despotisms congregated on these grounds and co-operated to make the Louisiana Purchase Exposition of 1904.

It is not my intention to dwell now on the features, the significance or the influence of that Exposition, except to say that it was a worthy tribute to the foresight and patriotism of a great statesman, a mighty champion of the rights of man and a fit commemoration of the rounding out of the first century of American government over an area which in wealth, resources and productiveness has no equal on the face of the earth. The Exposition has passed away. Its ineffable beauties have vanished. Its magnificent structures have been leveled. Its exhibits that portrayed the greatest and best achievements of the brain and brawn of man from the beginning of history, have been removed and the places of their installation obliterated.

The memories of that Exposition, however, will never die. It brought into friendly intercourse countries and peoples unacquainted if not antagonistic - was a great step towards universal peace; it lessened the circumference of the globe and was an advance toward the

disarmament of the world. It established new standards in the arts and opened up new vistas in science. It gave an impetus to human research in every line that benefits man. It increased our love of the beautiful and broadened our appreciation of the qualities thereof and thus taught us the better to live and added to our happiness. The record of that Exposition is made, and it will live in history.

It marked the beginning of a new era in the life of St. Louis. No enterprise in the history of the city ever so thoroughly aroused the enthusiasm of the people or enjoyed to so great a degree their zealous support. No movement has been so productive of public spirit, no work so prolific of civic pride. Such co-operation and such sentiment incited to redoubled effort and inspired with renewed confidence those upon whom devolved the carrying out of the undertaking.

The ceremony of this day is the beginning of the end. Eight years have elapsed since the dedication of 1903, which was participated in by the President of the United States and the only living ex-President, by senators, governors, representatives, ambassadors, ministers and commissioners of foreign countries, and many others of national and international renown. Seven years ago today the gates were opened and for seven months thereafter nearly twenty millions of visitors entered therein to witness to their delight and edification what was truly an epitome of civilization. At midnight of December 1st, 1904, the lights were turned out in the presence of an assemblage of fifty thousand people who sorrowfully walked away as mourners do from a newly made grave. During the six years and more that have since intervened the work of restoring this park has been so successfully prosecuted that its beauties far surpass what they ever were.

The Art Museum on yonder hill, the colossal equestrian statue of St. Louis overlooking the location of the majestic cascades, and the lagoon of delightful memories, are gifts of the Louisiana Purchase Exposition. The capacious World's Fair Pavilion to the east, on the site of the magnificent Missouri state building, was erected by the Exposition company on the request of Mayor Wells, the World's Fair mayor, whose co-operation and helpful aid will ever be held in grateful remembrance. The work of the post exposition period has been protracted and difficult but less exacting and much less interesting than that of the periods of preparation and operation. It is now practically completed.

We are assembled here today to lay the corner stone of a structure that will be a monument to Thomas Jefferson, third president of the United States, author of the purchase of the Louisiana territory, which act the St. Louis World's Fair of 1904 was held to commemorate. The erection of this monument was authorized by act of Congress approved March 1909, and by ordinance of the City of St. Louis approved March 1911. This site was selected by the Board of Public Improvements and the Directors of the Exposition company. It marks the main entrance to the exposition grounds.

The building will be of Bedford stone on a granite base-length 335 feet, width 66 feet, height of the main structure 45 feet, of the central dome 60 feet. In the center and facing to the north will be the statue of Jefferson, in sitting posture and of heroic size, 9 feet 6 inches; height, from the base of the pedestal, 17 feet. The structure, the statue, the enclosure, the surroundings will be in keeping with the man - Thomas Jefferson - a great American, whose memory is revered by lovers of liberty the world around, whose life's work is a sacred heritage to all his countrymen. Of him it has been truly said, "if America is right Jefferson was right; if Jefferson was wrong America is wrong." This imposing and symmetrical edifice will also be a worthy monument to its donor, the Louisiana Purchase Exposition. It comports with the stupendous project, its comprehensive plan and successful execution. Here will be a repository for the archives and relics of the Exposition. It will also be the home or the Missouri Historical Society - a safe abiding place for the rare and invaluable records of a section whose early beginning will become more and more interesting as it grows in wealth and population and culture.

The President then introduced Secretary Walter B. Stevens, who gave a list

of the articles to be deposited in the corner stone, passing them as enumerated to Issac S. Taylor, director of works and architect of the building. Mr. Taylor placed the articles in the copper box provided for them and then lowered the box in the receptacle prepared for it. President Francis spread the mortar with a silver trowel and after the stone was adjusted in place, said:

This stone is of superior grade, it is well finished and as lasting as the granite hills from whose base it was carved. I bow in deference to the skill of the artisan and salute in admiration of his genius the architect whose taste and ingenuity have combined in this plan the useful qualities of a safe repository for historical records and priceless relics with the monumental features of a commemorative structure. I thus put in place the corner stone of this memorial building. May it prove a firm foundation for the stately superstructure designed here to stand.

Rise! ye noble walls! may each stone as adjusted to its proper position form an adequate component part of a harmonious whole. May this appropriate monument when completed embody the spirit of its founders. May it be the mecca of all the people. May it inspire coming generations with the same civic pride and patriotic sentiments that prompted those who labored and sacrificed that the Exposition of 1904 might be truly universal in its scope and commensurate with the great event it was planned to commemorate. May it make a deep and lasting impression of the principles and teachings of Thomas Jefferson whose work and memory we seek to honor. May it aid in binding together all sections of our country and all of her people by ties of loving brotherhood, mutual respect and common interest. May it cement in bonds of reciprocal esteem all the nations that participated in the Louisiana Purchase Exposition, and thus again aid in prolonging the reign of universal peace. May the God of our fathers and the God of all nations bless this ceremony and look with gracious favor on this undertaking.

Uses of the Memorial:

This great memorial to Jefferson is designed to honor not only the man who secured the Louisiana territory, but the men and women who have been the makers of the history of this territory. We associate with him in the galleries and halls those historic characters who made of this added territory what Jefferson prophesied it would become.

On either side of the arch extend wings occupied by historical collections having special reference to the territory of Louisiana, now divided into thirteen states. There is a Jefferson Hall, upon the walls of which should be placed portraits of the persons most conspicuous in the history of the Louisiana territory and of the thirteen states formed therefrom. Occupying a considerable portion of one of the wings is an archeological collection which the Missouri Historical Society has been assembling with continuous effort, directed to all parts of the Louisiana Territory, during the last forty years. Another notable feature is the historical library, which includes not only books but thousands of manuscripts, diaries and letters bearing upon the history of this territory and of the thirteen states. The collection of this material has been in progress at St. Louis for more than half a century.

The collection of manuscripts goes back to the earliest settlements in what was the Louisiana territory. It is already one of the largest collections in the United States. Many of the manuscripts relate to the French and Spanish sovereignty. Included are original petitions of many settlers of Missouri and other states in the Louisiana territory for land grants. There are early marriage contracts. There are official letters of the governors and commandants before the

American authority superseded the Spanish.

There are contracts and negotiations more than a century old. The first printing press set up and used west of St. Louis, the second printing press brought to this side of the Mississippi river, is one of the historical exhibits. It was used at Franklin, Missouri, to print the "Missouri Intelligencer" as early as 1819. One of the cannon carried on the steamboats of the American Fur Company one hundred years ago is preserved. There are many oil portraits of governors and prominent pioneers of the states within the Louisiana Purchase.

The Indian collection is already large; it includes 30,000 specimens. One of the prized possessions of the historical society which will be given a conspicuous position is the sun dial which Thomas Jefferson made and used at his home, Monticello, in Virginia.

The Jefferson Memorial combines architecture and sculpture. The site selected was that made historic by the main entrance to the World's Fair. The rotunda or dome is sixty feet in diameter, with decorative features. The depth of the arch is about seventy feet. The entire front including the arch and the wings is three hundred and thirty-five feet. The facade of the central section is fronted by six marble pillars. The rotunda or arch is open. The width of the wings is fifty-six feet. The exterior of the structure is of stone, while the interior construction is of concrete. The building is fireproof in the most modern sense. The floors are of a concrete composition, the door and the window frames of bronze.

Bitter's "Signing of the Treaty" has a conspicuous place under the arch. It represents Monroe, Marbois and Livingston putting their signatures to the treaty of acquisition on the 30th of April 1803.

One of the inscriptions of the memorial tells what Jefferson himself thought of the acquisition of Louisiana when it had been accomplished. The words are these:

On this important acquisition so favorable to the immediate interest of our western citizens, so auspicious to the peace and security of the nation in general, which adds to our country territories so extensive and fertile and to our citizens new brethren to partake of the blessing of freedom and self-government, I offer to Congress and our country my sincere congratulations. -President Jefferson's special message to Congress, January 16, 1804.

The World's Fair of 1904 conferred a great benefit in awakening interest in trans-Mississippi history. The Jefferson Memorial, which was made possible by the joint action of the United States Government, the City of St. Louis and the Louisiana Purchase Exposition company, is the logical result of that awakening.

CHAPTER VII

THE FINANCES

Preliminary Expenses—Appropriation by Congress—The Canvass for Subscriptions—Individual Pledges of \$10,000—Municipal Bonds—A Temporary Government Loan—Repayment in Full—Washington University Lease—Nearly \$300,000 in Interest Earned

THE history of the finances of the Louisiana Purchase Exposition is an interesting and instructive narrative. After it was decided that nothing other than an international exposition would fittingly commemorate the great deed to be celebrated, the work of interesting this and foreign countries, and of bringing about participation by the federal and state governments and by the governments of all civilized countries proved a stupendous undertaking. When all the efforts that were required are viewed in retrospect - the many plans that were changed and abandoned after being adopted, the many disappointments - it is a matter of no small wonder that the courage and perseverance necessary to succeed were formed.

At about the inception of the movement it was decided that if the sum of \$15,000,000 could not be secured, St. Louis would abandon the effort to hold an exposition and that the President, who was Chairman of the Preliminary Executive Committee, would call together delegates composing the convention of January 10, 1899, and officially announce that St. Louis was unwilling to assume the responsibility of an international exposition. It was never contemplated to abandon the celebration of the centennial. In the event St. Louis determined a world's fair was impracticable the intention was to ask New Orleans or some other city in the Louisiana Territory to hold the exposition, and if no other city would accept then the celebration was to assume another form. The financial proposition was that \$15,000,000 should be furnished, one-third by a corporation whose capital of \$5,000,000 the people of St. Louis would subscribe; one-third, or \$5,000,000, was to be secured from the federal government, and the remaining one-third was to be furnished by the municipality of St. Louis through a vote of the people.

It was decided that the most difficult portion to secure was that of the federal government; consequently, all efforts were bent in that direction. The personnel of the delegation which went to Washington and worked there for seven weeks during the session of Congress of 1899-1900, and also of the delegation which went the following winter and remained five weeks, is given in another chapter.

The sundry civil act, approved June 6, 1900, included an appropriation of \$10,000 only, but such action on the part of Congress was construed by the exposition management to mean a commitment of the government to aid the

Exposition. The money required to defray the expenses of this preliminary work was contributed by one hundred and thirty men in St. Louis, with the understanding that such contributions should be considered as payments on their subscriptions to the Exposition company, if organized, and that if not such contributions should be donations without expectation of return. In the meantime, a movement had been started in St. Louis to procure subscriptions to a corporation to be called the Louisiana Purchase Exposition company, with a minimum capital of \$5,000,000. A mass meeting for that purpose was held in the old Exposition and Music Hall, Thirteenth and Locust streets, April 22, 1899. At that meeting, according to newspaper reports, \$4,244,670 was pledged, but as many of the announcements were unaccompanied by written obligations, the full amount claimed to have been subscribed at the meeting was not realized.

When the Washington delegation returned to St. Louis in the summer of 1900, business was depressed, and commercial dullness prevailed because of a protracted and violent street car strike. Such conditions were disheartening in the extreme. During the remainder of that year, however, a few men continued their efforts, and at the next session of Congress, December 1900, a bill was introduced appropriating \$5,000,000 in aid of the Louisiana Purchase Exposition. How the progress of that measure, notwithstanding the previous moral commitment of the same Congress, was impeded in various ways is told in earlier chapters. When the bill was finally passed and made a law by the signature of President McKinley, twenty minutes before the expiration of his term on March 4, 1901, the appropriation was made available only when the exposition management had demonstrated to the satisfaction of the secretary of the treasury that the sum of \$10,000,000 had been previously provided and expended in preparation for the Exposition.

To secure that \$10,000,000, it was necessary to have \$5,000,000 voted by the city of St. Louis as a municipality, and to procure subscriptions to the amount of \$5,000,000 to the exposition corporation. For weeks and months, it seemed impossible to procure legally binding subscriptions to the corporation in the amount required - \$5,000,000. The last million was more difficult to secure than the first four. In order to round out the \$5,000,000, the plan was finally suggested by our lamented treasurer, W. H. Thompson which proved successful. It was that one hundred men should pledge themselves in the sum of \$10,000 each, making a total of \$1,000,000. Each pledgor was to be released from his obligation on procuring additional and new subscriptions to the extent of \$10,000. These pledgors were the men who became directors of the Exposition company. The obligation signed by them is in the archives of the Exposition company, and will be preserved as one of its treasures. Not one of those pledgors was compelled to pay one dollar in satisfaction of his obligation. While some of the pledgors were unable to secure subscriptions, or preferred to pay the amount of their pledge rather than solicit subscriptions, others procured more than their allotment and transferred the excess to those who fell short of the pledges.

Municipal Bonds:

In order that the city might contribute as a municipality toward the Exposition it was necessary to pass a constitutional amendment permitting the city to increase its bonded indebtedness beyond the constitutional limit.

That was before the day of initiative and referendum; constitutional amend-

ments could only be submitted through the legislature, and then could be voted on at regular elections only. The next regular election was in November 1900. The state legislature of 1899 submitted such a constitutional amendment, and at the election held eighteen months later it was adopted by an overwhelming majority. In order to avoid the trouble and expense of another vote by the people of St. Louis after the passage of this enabling amendment, the amendment itself provided that if a majority of the people voting in St. Louis at the election to which this amendment was to be submitted voted for it, then the municipal assembly of St. Louis would have a right to authorize the issue of bonds in the sum of \$5,000,000 in aid of the Exposition.

The amendment was further conditioned on the federal government appropriating \$5,000,000, and on \$5,000,000 additional being subscribed by stockholders. After the amendment had been adopted and its conditions complied with, bonds to the amount of \$5,000,000 by St. Louis, bearing $3\frac{1}{2}$ per cent interest, were offered at a public sale and sold at par. Before those bonds were ready for delivery the purchasers who had been prompted to make their bid as much through patriotic pride or more so than through expectation of profit realized that $3\frac{1}{2}$ per cent bonds would not meet with a ready sale at par. They took the position and not without reason that they had paid par for the bonds and had been prepared to receive them from the time the bid was accepted, consequently they should not be expected to pay the accrued interest when the bonds were ready for delivery. The municipal government contended that it must receive par and accrued interest for the bonds. There was a difference of \$35,851.34 between the city administration and the purchasers of the bonds which threatened to defeat the sale and necessitate another letting. The Exposition company very wisely decided that it would be unwise to permit the sale to be set aside on account of this difference and subsequently paid it into the city treasury out of the treasury of the Exposition. Consequently, the city of St. Louis received \$5,000,000 and accrued interest for the $3\frac{1}{2}$ per cent bond issued, and the purchasers of those bonds paid but \$5,000,000 for them when \$35,851.34 in interest had accrued thereon. The exposition management passes no criticism on the position assumed by the municipal government in this matter, nor is it disposed to lay any blame at the door of the purchasers of the bonds, who paid full price for them, as has been clearly demonstrated by the prevailing market value on St. Louis and other city bonds since the date of that sale. If this action had not been taken by the exposition management and the bond sale had been set aside, it is more than probable that the next offering of the bonds would not have met with bids at par. The consequence would have been that the Exposition company, in order to avail itself of the \$5,000,000 aid voted by St. Louis, would have been compelled to guarantee the purchasers of these bonds against loss. The exposition management promptly assumed the payment of this difference of \$35,851.34 before the controversy between the city and the purchasers of the bonds jeopardized the sale or affected the market value of the bonds.

The subscriptions to the capital stock of the Exposition company were made payable in installments as follows: Ten percent upon demand for preliminary expenses; the remaining 90 percent upon the call of the Board of Directors when organized, in sums not to exceed 20 percent during any six months subsequent to the payment of 10 percent.

Considering the number of subscriptions and the financial stringency pre-

vailing throughout 1903, the payments of the calls made on the subscriptions were gratifying to a degree. While it was necessary in rare cases to bring suit on subscriptions which remained unpaid up to May 1904, the fact that at this writing subscriptions to a \$5,000,000 corporation made by 14,200 subscribers has been collected to the extent of \$4,924,288.11 is proof conclusive of the civic pride of the subscribers and of the estimate in which they held the St. Louis World's Fair.

Government Loan:

As the work of construction progressed and as the scope of the Fair continued to enlarge, as it did from the first official announcement that the Exposition would be held, it became evident to the management that the \$15,000,000 provided would be insufficient to meet pre-exposition requirements.

The Exposition company demonstrated to the satisfaction of the secretary of the treasury that the \$10,000,000 required by the government appropriation had been secured and expended. Thereupon the secretary of the treasury, Leslie M. Shaw, appointed Robert Fullerton of Des Moines the government representative. It was his duty to superintend the disbursement of the \$5,000,000 appropriation. He did so by approving vouchers to that amount, so that the government records show the exact disposition made of every dollar appropriated by the federal government. When the \$15,000,000 had been expended the work of construction was very far from completed; obligations were incurred to the extent of \$4,000,000 additional. Representatives of the Exposition were traveling throughout this and foreign countries arranging for exhibits and participation. The stupendous enterprise had assumed such proportions that its cost far surpassed all estimation. Effort was made in St. Louis to procure from the financial institutions of the city the money required to meet pressing necessities. The directors of the Exposition, ninety-three in number, had been previously called upon to subscribe \$5,000, each, toward the stock of the corporation known as the Hotel Realty Company, organized to erect a new hotel in order to supply the deficiencies of the city in that line. It was recognized that the city, having invited the world to be its guest, should make adequate provision for their accommodation. Eighty of the directors responded to this call and subscribed \$5,000, each, to the Hotel Realty Company. That company erected within twelve months' time the Jefferson hotel on Twelfth street, which has been in continuous operation since the opening of the fair and is today one of the first-class hostelrys of the country. If there had been no exposition, there would have been no Jefferson hotel.

When the Exposition company realized it was in financial straits, the directors were again called upon to endorse notes for the Exposition company in the sum of \$5,000 each. After they had complied with this request, and practically all of them did, -less than one-half million dollars would have been obtained from that source. It was evident, therefore, that very material aid must be secured from outside of St. Louis. A delegation consisting of Treasurer W. H. Thompson, Vice-President D. M. Houser and the President journeyed to Washington for the purpose of presenting to Congress what appeared to be a hopeless if not an absurd proposition. It was that the government should make a loan to the Exposition of \$4,500,000, to be repaid as follows: forty percent of the gross

receipts from paid admissions from June 1st to June 15th; 40 percent of the gross receipts thereafter on the 1st and 15th of each month, provided that after the 1st of July and until the entire loan was repaid the semi-monthly payments should be not less than \$500,000.

The delegation went before the appropriations committees of both houses of Congress and in terms which were earnest and meant to be impressive presented to those committees the condition of the Exposition company, and the moral obligation under which the federal government had placed itself when it extended invitations to foreign countries to participate in the inter national exposition. Great doubt was expressed by the Speaker of the House and by the members of the two appropriations committees as to the ability of the Exposition company to repay the loan if made. Many members of both houses were opposed to the loan on constitutional grounds. The Exposition company pledged as security for the payment of the loan the gate receipts and the concession royalties. The plan provided that if the Exposition company should default in any one of the payments when due, the federal government, through the national commission or whatever other agency it might elect, might place its representatives at the gates, and appropriate all receipts sufficient to make the payment then due. The Congress to which this proposition was made was a new Congress, -not the same which had made the original appropriation. President McKinley who had extended the invitation to foreign governments to participate in the Exposition had been assassinated, and although his successor, President Roosevelt, had renewed the invitations, neither the new Congress nor the new administration felt the same moral obligation that would have rested upon their predecessors.

While this application was pending in Congress, a very destructive conflagration broke out in Baltimore and raged for several days. The proximity of Baltimore to the national capitol cast gloom over both cities and had a depressing effect upon those who held the national purse strings. Notwithstanding all of these difficulties, Congress lent a sympathetic ear to the Exposition's appeal and granted the loan. More than that, the Board of Lady Managers, through its president, Mrs. Daniel Manning, appeared on the scene in Washington and requested that the loan be increased from \$4,500,000 to \$4,600,000, and that the additional \$100,000 be placed at the disposition of the Board of Lady Managers. That \$100,000 was granted also. This loan made the available funds of the Exposition company \$19,600,000.

Expenditures up to Opening Day:

The government loan was applied before the opening of the Exposition. The extraordinary demand for labor incident to the building of exhibit palaces and concessions and the installation of exhibits caused an enormous advance in wages. The rush which always attends the completion of a great undertaking, the opening of which is fixed for a given date specially when such an undertaking is participated in by forty-odd states, territories and possessions of our country and by thousands of exhibitors-is a potential factor in increasing the cost of every element entering into the work. When the exposition gates were opened the sum of \$21,000,000 had been expended and contracted for. The sum of \$676,135.48 had been received from pre-exposition admissions, concessions and miscellaneous sources. There were outstanding bills of more than

\$2,000,000.

The government loan of \$4,600,000 was promptly paid as it matured, to the surprise and gratification of the senators and representatives who had voted for it, and to the credit of the exposition management. The limitations of this report forbid a detailed statement of every dollar spent, but for every cent paid out of the exposition treasury a voucher is on file. The financial receipts and disbursements have been several times examined by expert accountants whose reports are on file and subject to inspection at any time. Vouchers for the \$10,000,000 expended before the government appropriation became available were submitted to and approved by the secretary of the treasury.

Washington University Lease:

Before the work of construction began a lease was entered into with Washington University for the use of its buildings which at that time numbered six, being the Administration building, the Busch Chemistry building, the two Samuel Cupples Engineering buildings, Liggett dormitory and the Engineering Laboratory building. Washington University occupied 108.9 acres, all of which was included in the lease. The consideration paid for the use of those buildings was \$650,000, conditioned on the Fair being held in 1903, or \$100,000 additional, if the Fair should be held in 1904; in either event the buildings were to be turned back to the university on January 1st after the closing of the Exposition. A further condition of the lease was that the money to pay for the rental should be deposited before the buildings and grounds were turned over; that such deposit should be subject to the joint check of the Exposition and the University, and should be disbursed in the payment of four additional buildings which were to be completed before the opening of the Exposition and turned over to the Exposition company for use during the life of its lease. The four buildings to be constructed were Physics, Dormitory, Gymnasium and Library. A condition of the lease was that two of these buildings should be named by the Exposition company, but that provision was subsequently altered so that only one of the four buildings erected was named by the Exposition company, - the gymnasium building and athletic field which are called the David R. Francis Gymnasium and Francis Field. The \$750,000 deposited under this lease drew interest at the rate of 2 per cent per annum, and the Exposition company realized from that source \$8,544.49 for interest. While the use of the Washington University buildings and ground was a great convenience to the Exposition, especially as three or four of the buildings were ready two years before the Exposition opened, the arrangement was also of great benefit to the Washington University which was not greatly inconvenienced. By that lease the university received \$750,000 which otherwise it would not have been able to procure unless by donations, and furthermore it was the recipient of such publicity through the millions that visited the Fair as it could not have secured in any other way. There is justification, therefore, for claiming that the four buildings leased from the Washington University are another monument to the Louisiana Purchase Exposition.

Interest Revenue:

The total amount to the credit of interest account at the publication of this report is \$290,113.23, of which \$8,544.49 was received from interest on the Washington University building fund; \$281,568.74 was received from interest on the Exposition's deposits. Of the latter amount \$140,310.67 was collected by our lamented treasurer, W. H. Thompson, who died in December 1905. After his death the President was made treasurer, which office he holds at this time. At the demise of Mr. Thompson, the amount in the treasury was \$852,233.52. On portions of that amount which have been on deposit \$149,802.56 interest has been collected to this date. The bulk of this money has been deposited in the financial institutions which subscribed to the Exposition and has borne interest at the rate of 3 to 4 percent, which has been compounded quarterly.

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