

GOVERNMENT EXHIBITS AT THE CENTENNIAL.

FEBRUARY 1, 1877.—Referred to the Committee on Public Buildings and Grounds and ordered to be printed.

Mr. HOPKINS, from the Select Committee on the Centennial Celebration, by unanimous consent, submitted the following

REPORT:

The Committee on Centennial Celebration, to whom were referred that portion of the President's message recommending that suitable provision be made for the preservation of the Government collection at the Centennial Exhibition, beg leave to report :

That they have fully and carefully considered the President's recommendation, and also the letters from Professors Henry and Baird, of the Smithsonian Institution, which are hereto attached, and they appreciate the great importance of prompt and favorable action by Congress to provide a suitable building for the preservation and display of, perhaps, the largest, most interesting, and valuable museum in the world.

It may be well to call attention to the history of the Government exhibit, and to its character, extent, and value, especially as it has been increased by large and generous donations from other nations, who were also exhibitors at our Centennial Exposition.

1.—INCEPTION OF THE IDEA OF A GOVERNMENT EXHIBIT.

Call of the President.—On the 23d of January, 1874, the President of the United States called upon the various Departments of the Government, including the Smithsonian Institution, to nominate one member each, to constitute a board in behalf of the Executive Departments, to which should be committed the preparation and adoption of a plan for a collective exhibition at the International Exhibition of 1876, "of such articles and material as will illustrate the functions and administrative faculties of the Government in time of peace, and its resources as a war-power, and thereby serve to demonstrate the nature of our institutions, and their adaptation to the wants of the people."

Appointment of board of Executive Department.—The persons designated, in response to the call of the President, were the following:

By the Secretary of the Treasury, F. M. SAWYER.

By the Secretary of War, Col. S. C. LYFORD, U. S. A.

By the Secretary of the Navy, Admiral T. A. JENKINS, U. S. N.

By the Secretary of the Interior, JOHN EATON.

By the Postmaster-General, CHARLES F. McDONALD.

By the Department of Agriculture, WILLIAM SAUNDERS.

By the Smithsonian Institution, S. F. BAIRD.

On the 25th of March, 1874, the nominations were approved by the President for the board referred to, and Col. S. C. Lyford was designated

as chairman. Subsequently, on the retirement of Mr. Sawyer, Mr. R. W. Taylor was appointed in behalf of the Treasury Department.

The first business before the board being that of preparing a general plan of the exhibition, and estimates of the cost of carrying this out for each Department, the following estimates were made, after a careful consideration of the subject, as being absolutely necessary to accomplish the work on a proper scale:

Original estimates of board.

Interior Department.....	\$211,000
Treasury Department.....	5,000
Post-Office Department.....	5,000
Agricultural Department.....	50,000
Smithsonian Institution.....	100,000
War Department.....	200,000
Navy Department.....	150,000
Add for show-cases, shelving, incidentals, &c.....	50,000
For a separate building, capable of removal to Washington after the close of the exhibition, to be used as a national museum at the capital of the nation.....	200,000
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	971,000

Amount actually appropriated.

These estimates were reduced by the Committee on Appropriations to the following, which was passed without opposition from any quarter:

War Department.....	\$133,000
Navy Department.....	100,000
Interior Department.....	115,000
Treasury Department.....	5,000
Post-Office Department.....	5,000
Agricultural Department.....	50,000
Smithsonian Institution.....	67,000
United States Commission of Food-Fishes.....	5,000
For show-cases, shelving, stationery, postage, telegrams, expressage, and incidentals.....	25,000
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	505,000

Authority was also given in the enactment to erect any building or part of a building that might be necessary; to be "paid for *pro rata* out of the sums appropriated to the several Departments, the United States Commission of Food-Fishes, the Treasury and Post-Office Departments excepted, the cost of the building not to exceed one hundred and fifty thousand dollars; said building to be sold at the close of the exhibition and the proceeds covered into the Treasury as miscellaneous receipts."

Authority was also given to the heads of the several Executive Departments to display at the exhibition, under such conditions as they might prescribe, all such articles in store or under the control of such Departments as might be necessary or desirable to render the collection complete and exhaustive; but the board were forbidden to expend any larger sum than was set down for each Department, or to enter into any contract or engagement that should result in any such increased expenditure.

In regard to the matter of accommodations, inquiry was first directed to the Centennial authorities in Philadelphia as to whether a building would be erected by them for the Government board; or, if not, whether space could be had in the main building. The board was informed, in re-

sponse, that it would be impossible to put up a special building, but that space might be had in the general buildings of the exhibition, provided the objects could be divided and classified according to the plan adopted by the commission. This, however, would have involved the separation of the various elements of the Government display, and prevented its exhibition as a whole, and it was finally concluded to erect a building on the ground assigned by the Centennial Commission, and in a very excellent situation.

2.—PREPARATION FOR THE EXHIBITION.

Erection of building.—A committee of the board of the respective Departments, as above constituted, was appointed to take into consideration all the matters relating to this building, and to consider plans for the same, and from several offered them, that of an edifice in the form of a cross, designed by James H. Windrim, of Philadelphia, was selected. This occupied 102,840 square feet, of which 20,840 was taken up by passages, leaving a space remaining of 82,000 square feet for exhibition purposes. It was completed and ready for occupation March 1, 1876, on which date it was accepted by the board. The space assigned to each Department was as follows:

	Feet.
War Department	11,200
Navy Department	10,400
Treasury Department	3,000
Post-Office Department	3,800
Interior Department	20,600
Agricultural Department	6,000
Smithsonian Institution	20,600
Fish Commission	6,000
	81,600

The original contract for the cost of this building was \$67,201.61, but subsequent changes somewhat increased the amount; these, with other expenses, such as grading the ground, &c., made the total amount to be deducted from the available fund and divided *pro rata* among the various Departments, with the exception of the Treasury and the Commission of Food-Fishes, about \$94,000, leaving about \$411,000 for the actual purposes of the display.

The building was entirely of wood, and, of course, liable to damage from fire. A careful guard was, however, maintained, and no accident of any kind occurred during the exhibition.

Second appropriation.—The amount appropriated for the purposes represented by the board, being inadequate to the actual necessities of the exhibition, a second appropriation was made July 19, 1876, of the following amounts:

Interior Department	\$15,000
War Department	18,500
Treasury Department	14,000
Smithsonian Institution	21,000
United States Fish Commission	5,000
	63,000

making the total appropriated, \$568,500.

3.—EXHIBIT AS MADE.

Completeness on opening-day.—Although the time at the command of the board for the preparation of the exhibit was short, and the amount

of money appropriated to carry out the plans of the several Departments was considered by them insufficient for the purpose, on the opening-day of the exhibition most of the articles were in their places, this being especially the case with those of the Army and Navy; and the remainder were ready within the course of a few weeks later. In this respect the Government display was in advance of those in the other buildings, the internal arrangements of which were more or less incomplete for a long time after the 10th of May.

Summary of exhibits in the different sections.—The collections as finally arranged consisted essentially of the following elements:

A.—THE WAR DEPARTMENT.

1. *The Signal-Service Bureau.*—In this was shown the apparatus of the Signal-Office proper, with its field telegraph and wagons, instruments, &c., and that of the weather-observation division, with its self-registering and other meteorological apparatus. Here weather observations were made and recorded, and a copy of the daily weather bulletin posted.

2. *The Ordnance Bureau.*—Here was shown all the machinery in working operation, for the manufacture of cartridges and of the Springfield rifle, together with a series of models of ordnance of different patterns, shot, shell, &c.; and outside the principal building was a laboratory for illustrating the methods of testing ordnance and powder.

3. *The Quartermaster's Department.*—This displayed specimens of the uniforms of soldiers at different periods in the history of the American Army, the horse-equipments, tents, blankets, &c., as also a veterinary display illustrating the diseases of horses' feet.

4. *The Engineer Bureau.*—Here were shown models of river and harbor improvements, including that of the excavation at Hell Gate, samples of maps and charts issued by the bureau, &c.

5. *The Medical Department.*—The exhibit of this Department of the Army consisted of a model hospital of the size and equipment of those of usual construction at military posts. Here were the appliances used for keeping and transporting sick and wounded on land or water, the medicines used in the Army, surgical apparatus, and photographs and engravings illustrating the surgical history of the Army, &c.

B.—THE NAVY DEPARTMENT.

1. *Navy Ordnance Bureau.*—In this section were exhibited the different large and small arms used by the Navy at present and in the past, illustrations of the torpedo system, &c.

2. *Bureau of Steam-Engineering.*—This embraced specimens of the different forms of engines used in naval vessels.

3. *The Bureau of Construction and Repair.*—This exhibit included two large working models of the Antietam, one 50 feet long, and serving as a trial-ship for the cadets at Annapolis. Also, a model of a newly-constructed monitor; and a full-sized monitor-turret with its guns was displayed outside of the building.

4. *Bureau of Yards and Docks.*—This showed various models of the different dry-docks belonging to the United States Navy.

5. *Bureau of Medicine and Surgery.*—This presented an exhibition of the various drugs, medicines, food, &c., as prepared for use on ship-board, together with all the equipments of naval hospitals, models of hospital-ships, &c.

6. *Bureau of Equipment.*—Here were shown ships' galleys, boat stores,

uniforms of the Navy in different periods of its history, specimens of rope, bunting, signals, and various patterns and forms of flags.

7. *Bureau of Hydrography.*—The most interesting portions of this were the collection of articles illustrating the various polar explorations of Kane, Hayes, and Hall; also specimens of charts prepared by the Hydrographic Office, compasses, sounding apparatus, and the apparatus used in the observations of the transit of Venus by the American parties.

C.—TREASURY DEPARTMENT.

1. *The United States Coast-Survey and Bureau of Weights and Measures.*—In this were shown a series of the weights and measures of the United States and the very complete apparatus used in the measurement of base-lines for surveys. A series of the reports of the office and of its maps and charts was also displayed.

2. *Light-House Board.*—In this were shown the different lanterns used for purposes of illumination; the different oils, wicks, &c.; models of light-houses, light-ships, &c.; outside of the building was erected an actual light-house in full working order, and lighted every night; as also a fog-trumpet or siren of enormous power, capable of being heard at a distance of many miles. This was used to indicate the time, daily, for the opening and closing of the Centennial Exhibition.

3. *Revenue Bureau.*—In this were shown the specimens of all the forms of revenue stamps and the apparatus used in gauging, &c.

4. *Bureau of the Supervising Architect of the Treasury.*—In this, models of various public buildings were shown.

Specimens of United States currency, bank-notes, &c., were also shown by the Treasury Department, as also a complete life-saving station, with boats, &c.

D.—POST-OFFICE DEPARTMENT.

In this portion of the building was held the Centennial branch of the Philadelphia post-office, fully meeting the needs of the Centennial Exhibition, and kept up several weeks after the close. Here were seen in operation machines for making stamped envelopes, samples of locks, bags, &c., and two first-class railway postal cars.

E.—DEPARTMENT OF THE INTERIOR.

1. *Bureau of Education.*—In this division were shown models of school-houses from different parts of the country and different periods in our history; school-furniture; apparatus for educational purposes; samples of school drawing and articles used in object teaching; illustrations of the progress of the Indian tribes in education and civilization.

2. *Census Bureau.*—This presented the original schedules of the census of 1790, 1840, and 1870, illustrating the progress of the country by the comparative magnitude of the records.

3. *The Patent-Office.*—In this was shown a selection of models from the Patent-Office, illustrating the more important stages of development in the industrial and economical arts from the beginning of the Patent-Office system to the present day, as also a complete set of publications of the office.

In connection with this display were arrangements for illustrating the actual methods by which patents are issued in the United States, from the first application for the purpose to its entire completion. In the Patent-Office section were also shown a variety of historical relics, in-

cluding articles of clothing once owned by Washington, as well as his camp furniture and equipage.

4. *The General Land-Office* exhibited its series of maps, especially one of very large size, constructed expressly for the purpose, and showing the present condition of the land-office system over the whole United States.

5. *The Indian Bureau*.—This display, which was made in co-operation with the Smithsonian Institution, contained illustrations of the aboriginal inhabitants of the United States, both ancient and modern; specimens of their stone implements and pottery; their weapons and domestic utensils; their ornaments and articles of religious observance, &c.

6. *Pension-Office*.

7. *Geological surveys of the Territories*.—Here were exhibited models in relief, of areas of the western country, and of ancient ruins, transparent and other photographs of scenery, antiquities, and Indians, books, maps, charts, &c.

F.—DEPARTMENT OF AGRICULTURE.

1. *Chemical section*.—In this were shown the soils, rocks, marls, fertilizers, agricultural products and their derivatives; samples of food, such as flour, sugar, &c.; products of dry distillation of wood; preparations of oils, &c.

2. *Natural-history section*.—This exhibited birds, insects, and other animals injurious or beneficial to the farmer, and included a series of 300 engraved plates to illustrate a work on the economical entomology of the United States. Also, models of different fruits and vegetables, and sections of 400 species of North American woods, with their leaves and fruits, as well as a series of vegetable fibers, with their applications.

3. *Statistical section*.—In this were shown charts and maps of the farmlands, the distribution of forests, and the regions suitable for the cultivation of various staples. There were also many engravings of agricultural colleges, &c.

G.—THE SMITHSONIAN INSTITUTION.

This illustrated, first, the operations of the Institution itself; second, that of the National Museum of the United States, under its charge.

1. *The Smithsonian Institution*.—This display contained a full series of all the publications of the Institution, and charts illustrating its system of international exchanges, with a set of large charts showing the mean temperature and the rain-fall in the United States.

2. *National Museum, under the direction of the Smithsonian Institution*.—In the museum section were shown collections illustrating the economical mineral wealth of the United States, in series of ores of the precious and baser metals and their metallurgy, including specimens of the metals and their simple applications; the materials used in the manufacture of glass, such as sand, soda, &c.; and the earth and clays, with their applications in tiles, terra-cotta, bricks, and pottery; the different varieties of coal, petroleum, samples of the principal building-stones, as marble, granite, &c.

The animal section contained, first, representations of the animals of the United States of economical importance to the country, as furnishing food, ivory, bone, leather, glue, furs, bristles, oil, &c.; second, the apparatus by which these animals are pursued and captured; third, the means by which they are utilized for the wants or luxuries of man

when taken; fourth, specimens of the products of such utilization and their simple applications; and fifth, the methods by which they are protected and multiplied.

H.—THE UNITED STATES FISH COMMISSION.

In this was shown a series of models in plaster or papier-maché of the principal fishes and cetaceans of the United States, and photographs and original drawings of the same, as furnishing oil, bone, or manure, together with the apparatus of pursuit and capture; models of boats of different styles of construction, and special illustrations of the whale-fishery. Also, the methods of fish culture, in illustrations of hatching-boxes, carrying-vessels, models of fish-ways, &c. This display, and that of the animal department of the Smithsonian exhibit, were more or less united, and illustrated not only the methods and appliances of civilized man in this connection, but also those of the American savage.

Public opinion in regard to the Government exhibit.—As already remarked, the officers in charge of the Government exhibit were unable to make it as complete as they had hoped, on account of the reduced appropriation for the purpose; but as it was, it was considered by all visitors as decidedly the best part of the International Exhibition, in view of the extent and exhaustiveness of the collection and the method and order of its display.

No special catalogue of the Government exhibits was printed, authority not having been obtained from Congress for the purpose, although a very full catalogue has been prepared.

The building was constantly the resort of intelligent visitors from all parts of the world, and a great many critical reports have been published already in foreign journals in regard to this display. Professor Archer, one of the chief commissioners from Great Britain, in a lecture recently delivered before the Society of Arts in London, uses the following language in speaking of the United States Government building and its annexes:

This group consisted of a very large edifice in the form of a cross, erected by the United States Government at a cost of \$60,000. And in addition, a laboratory for illustrations of arsenal work and a model military hospital, which was of great practical utility during the exhibition. Within the chief building were displayed most interesting and instructive collections, illustrative of the work of the Smithsonian Institution and the general and geological surveys of the States; the mineral, zoological, and botanical collections connected with those surveys, and also most important ethnological and pre-historic collections; the great collection of food-fishes of America made for the fishery commission by Professor Baird, with the appliances for catching and preserving fish; also series illustrating the various naval and military weapons and engines and machinery for arsenal work; and lastly, a complete display of all the applications in the postal department of the States. The general arrangement of the contents of this large building, covering about two acres, was most satisfactory, and had been carried out under the most competent scientific supervision; hence it was felt to be the most instructive portion of the Centennial Exhibition. It brought into full view a great mass of the intellectual work of some of the greatest of American workers in the fields of science.—(Journal of the Society of Arts, December 22, 1876.)

These suggestions were based upon the exhibit as actually made, and which closed with the expiration of the Centennial Exhibition, on the 10th of November.

4.—DONATIONS TO THE UNITED STATES GOVERNMENT.

After the close of the exhibition a new element was introduced into the question of the transfer of the Government collections to Wash-

ington, and their arrangement for inspection and study, namely, the donation to the United States of many objects, or entire collections, that had been displayed elsewhere in the exhibition than in the Government building. These were derived from two sources :

First. From American State commissions and private exhibitors, by whom much material of great value was presented, and tending to fill up important blanks.

Second. From the commissions of the several foreign governments participating in the International Exhibition of 1876.

The experience of previous expositions had indicated the probability of contributions from the latter source, and to meet the expected emergency Congress, at its last session, granted the armory-building to the National Museum, and made an appropriation for the purpose, in the following words :

For repairing and fitting up the so-called armory-building, on the Mall, between Sixth and Seventh streets, and to enable the Smithsonian Institution to store therein and to take care of specimens of the extensive series of the ores of the precious metals, marbles, coals, and numerous objects of natural history now on exhibition in Philadelphia, including [any] other articles of practical and economical value, presented by various foreign governments to the National Museum, four thousand five hundred dollars: *Provided*, That the said sum shall be expended under the direction of the Smithsonian Institution.

The contributions from the States were of very great value ; Nevada, Utah, Montana, Tennessee, &c., presenting most valuable series of their ores, while an aggregate of much magnitude was received from individuals—minerals, metals, ores, building-stones, coals, pottery, &c., all being included. It was, however, from the foreign commissions, as above referred to, that the greatest mass was derived, so that, although the gift of some articles was anticipated, the members of the Government board were not prepared for the wholesale donation of by far the greatest portion of the collective exhibits made by foreign nations, as well as those of many of their individual exhibitors. Among these may be mentioned specimens of mining and metallurgy, ores, metals, combustibles, building-stones, earths, clays, tiles, terra-cotta, and pottery; vegetable products, as samples of woods, fibers, seeds, medicinal plants, &c.; furs, skins, gelatine; samples of industrial products, in the way of woven and plaited fabrics, objects in metal, wood, glass, earthen wares; illustrations of manners and customs, &c.

List of countries from which donations were received.—The nations from which were received the collections in question are the following: Argentine Republic; Austria; Africa, (Orange Free State;) Belgium; Brazil; Chili; China; Egypt; France; German Empire; Hawaiian Islands; Japanese Empire; Mexico; Netherlands; Norway; Peru; Portugal; Russia; Spain; Phillipine Islands; Sweden; Switzerland; Tunis; Turkey; United Kingdom and Colonies—Bermuda, Canada, New South Wales, New Zealand, Queensland, South Australia, Tasmania, Victoria; Venezuela.

The commissions which are not included in this list had nothing at their disposal, their exhibitions consisting either purely of private material reclaimed or otherwise disposed of by their owners, or, as in the case of several British colonies, of articles borrowed from the colonial museum in London, and necessarily returned there.

Assignment of collections received.—While no special authority had been given by Congress to receive these articles, it was not considered proper to refuse them ; and they were accordingly taken charge of by the several Departments of the Government to which they were most nearly re-

lated. An exhibit of the iron, chain-cables, cordage, &c., of the naval department of Russia was received by the representatives of the Navy Department. To the Bureau of Education was delivered everything of an educational character. The Department of Agriculture received the articles belonging to the vegetable kingdom, such as sections of wood, fibers, grains, seeds, &c.; while articles belonging to the mineral and animal kingdoms, and as illustrative of the manners and customs of the people, were taken by the Smithsonian Institution; and objects relating to the fisheries, by the United States Fish Commission.

Accompanying communications from some of these Departments give in fuller detail the character of these donations. Suffice it to say that, so far as the Bureau of Education, the Department of Agriculture, the Smithsonian Institution, and the Commission of Food-fishes are concerned, the collections promise to exceed in magnitude their own centennial exhibitions.

5.—PROPOSED TRANSFER OF THIS COLLECTION TO WASHINGTON.

General feeling on the subject.—The interest in the exhibition of the Government very naturally suggested to many the importance of transferring it to Washington and maintaining it in its original form, and numerous suggestions and earnest appeals to that effect have already appeared in the public press. This feeling met with special expression in a resolution of the National Academy of Sciences at its session in Philadelphia in October. And in compliance with its instructions, Professor Henry, its president, transmitted to the President of the United States the following communication :

SMITHSONIAN INSTITUTION,
Washington, D. C., November 13, 1876.

To His Excellency the President of the United States :

SIR: I have the honor to inform you that at a meeting of the National Academy of Sciences, held in October last, the following preamble and resolutions were unanimously adopted:

"Whereas the members of the National Academy of Sciences have been greatly impressed by the extent, rarity, and richness of the truly national collection contained in the Government building at the Centennial Exhibition, and considering the great importance and lasting interest with which the people of the United States must regard this collection; therefore,

Resolved, That, in the opinion of the Academy, the Government collections, as a whole, should be transferred to Washington, and there preserved in an appropriate building for perpetual exhibition.

Resolved, That the Academy entertains the hope that the President of the United States will favor the foregoing proposition; that he will delay the dispersion of the exhibit from the several Executive Departments until Congress has assembled, and that he will recommend to that body to provide for the transfer of the Government collection to the city of Washington and for its subsequent permanent support."

In transmitting these resolutions to your excellency, I beg leave, in favor of the proposition, to suggest, first, that the exhibit would form a fitting memorial of the centennial condition of the country; second, that it would illustrate in a striking manner the appliances used by the Government in carrying on its various and complex operations; third, that it would be a repository in which the natural resources of each State would be exhibited; fourth, that it would give information, in one view, of importance to the statesman, legislator, scientist, educator, and the capitalist of our own and of foreign countries; fifth, it would be of interest to the intelligent public at large, and would meet the approbation of all who regard the prosperity of the country and take pride in the condition of the national capital.

In conclusion, it may not perhaps be improper to remark that I do not advocate this proposition for the purpose of extending the power and influence of the Smithsonian Institution; on the contrary, I think the exhibit should be made a truly national one and be immediately under the control of the Government.

I have the honor to be, very respectfully, your obedient servant,

JOSEPH HENRY,
President National Academy of Sciences.

Economical value of the collection.—Embracing, as these donations do, the essential portion of the displays of foreign nations, such as their natural products, general industries, and educational and scientific methods, &c., it is clearly evident that the element of the Centennial Exhibition of most importance to the American people has thus been left to it in the closing of the Centennial, and, if properly administered, must conduce in a very great degree to the material and mental advance of the nation. By re-arranging it in a systematic manner, in connection with the articles already shown, a most instructive and important museum can be made available to the people of the United States. We are assured that no such collection as this is to be found in any part of the world, and it is very doubtful whether it can ever again be reproduced, as many of the nations represented at the Centennial have intimated their intention of not taking part in the Paris or future exposition.

Distribution of duplicates.—As might be expected, a large amount of duplicate material accompanies these donations to the United States from America and foreign sources, which, when a final arrangement is accomplished, can, if Congress so direct, be distributed to various educational and industrial establishments throughout the United States.

Commercial value.—The expenditures of the United States for an exhibition lasting but six months have amounted to nearly \$600,000. The donations from our own States and individuals, tending to fill up some of the gaps and complete the American display which an insufficient appropriation interfered with, and those from foreign nations which have been given to the United States, can hardly be considered as over-valued at \$400,000, and we therefore have an aggregate of property in value of at least a million of dollars to provide for.

Future increase of collections hereafter.—Promises have been made by most of the foreign commissions to complete any portion illustrating the natural products and industries of their respective countries whenever the arrangement of the collection shows the deficiencies.

Action of President in regard to transfer.—In view of the magnitude of the collections thus acquired by the United States, and the inadequacy of any present provision for their transfer to Washington and their arrangement here, as also in view of the urgency of the appeal of the National Academy of Sciences, the President, under date of November 17, 1876, issued an order forbidding the removal of the articles in the Government building until some arrangement could be made in regard to them. This order was subsequently modified by allowing such objects as were required for the use of the Government, in Washington or elsewhere, to be transferred; as also such as were liable to decay or injury by remaining in a building exposed to cold and dampness. The greater part of these articles are now stored in the Government building at Philadelphia, waiting some action on the part of Congress.

Demolition of Government centennial building soon required.—As the contract made by the Park Commission with the Centennial Commission requires the removal of all the buildings within sixty days of the close of the exhibit, it is necessary to take speedy action on this subject; and if Congress does not see fit to erect a building at the present time for the proper display of the collections, measures must at any rate be authorized for their removal to Washington and their storage in some safe place. As the appropriations made to the Government board did not contemplate these foreign and domestic donations in their enormous aggregate, your committee earnestly recommend that an appropriation shall be

made to convey this large and most interesting collection to Washington City, and for the erection of a suitable building in which to exhibit the same, so that all of our citizens may have free access and abundant opportunity to study the contents of a really international museum.

No argument is needed to prove the beneficial effects upon the whole people of an intimate knowledge of the great resources of our own and of other nations. And the advantages which will be afforded by the contemplated museum cannot be overestimated.

The location and plans suggested by Professors Henry and Baird seem to your committee convenient and proper. The very nature of the collection suggests its association with the museum of the Smithsonian Institution; but securing and providing for the display is vastly more important than the selection or adoption of any specific place.

SMITHSONIAN INSTITUTION,

January 24, 1877.

SIR: As chairman of the committee to which was referred so much of the President's message as relates to the transfer of the Government collections to Washington, I beg leave to submit to you the following remarks:

1. Congress, in the organization of the Smithsonian Institution, directed that it should make provision, on a liberal scale, for a museum, which should contain all objects of natural history and of curious and foreign research belonging to the Government. In accordance with this direction the Institution erected a building, which has cost upwards of \$500,000, from the Smithson fund. It has also developed and for many years principally supported this museum, the collections being the property of the Government, while the building was erected out of the Smithson fund.

2. On account of the appropriations of Congress for the Centennial, and the liberal donations which have been made to the collections by the States of the Union, by individuals, and especially by foreign governments, the National Museum has suddenly increased to fourfold its previous dimensions.

3. For this increase an additional building is required, which cannot be made, as the previous one was, from the income of the Smithson fund, and means must therefore be provided by an appropriation from Congress for this purpose.

4. The edifice required should be placed in connection with the present Smithsonian building, in order that the whole may form one system; for should it be placed on other grounds and made a distinct museum, the present Smithsonian building, far too large for its own operations and too expensive to be properly sustained, would be left upon the hands of the Institution.

I herewith beg leave to transmit the accompanying communication of Prof. S. F. Baird, who had charge of the Smithsonian exhibit at the Centennial, which contains a full exposition of the nature of the additions to the museum and of the necessity of the immediate erection of a suitable building to contain them.

I am, very respectfully, your obedient servant,

JOSEPH HENRY,

Secretary Smithsonian Institution.

Hon. JAS. H. HOPKINS,
House of Representatives.

SMITHSONIAN INSTITUTION,
Washington, January 18, 1877.

SIR: Understanding that the Centennial Committee of the House of Representatives has under consideration that portion of the President's message in reference to the re-arrangement of the collections exhibited in the Government building at the International Exhibition in some suitable building in the city of Washington, I would respectfully request that you communicate with them in reference to the needs of the Smithsonian Institution, to which the care of the National Museum has been committed by Congress.

There is, I believe, no question as to the satisfaction of the American people with the United States exhibition made in the Government building. It was a subject of repeated commendation, and suggestions were continually made by the press and elsewhere as to the importance of its transfer to and maintenance in the city of Washington. It was universally considered the best part of the Centennial display, and was the special object of attention and investigation among the foreign judges and members of the foreign commissions whose duty it was to prepare reports upon the International Exhibition of 1876 to their respective governments. Professor Arceff, one of the two chief commissioners from Great Britain, in an address delivered before the Society of Arts in London on the 22d of December, especially characterizes the Government exhibit as the most interesting and important at the Centennial.

The general feeling on the subject of a transfer of the collections found expression in the vote of the National Academy of Sciences, the highest scientific tribunal in the country, at its October session, in which the president of the academy was instructed to address the President of the United States in reference to the importance of exhibiting in Washington the United States collection then in Philadelphia. This was done, and the subject was referred to in the message of the President with earnest commendation. The collections were at the same time ordered by him to be kept in the Government building until the decision of Congress could be ascertained. The transfer of the objects from the building was therefore arrested to wait further action.

As is well known to the committee, the participants in the display were the War, Navy, Treasury, Interior, Post-Office, and Agricultural Departments, the Smithsonian Institution, and the United States Fish Commission; and it is especially with reference to the last two sections that I beg leave to address you.

The exhibition made at the Centennial by the Smithsonian Institution, in connection with that of the United States Fish Commission, was intended to represent especially the animal and mineral resources of the United States. The mineral display was designed to show the products of the United States as derived from its mines, and embraced the largest collection of ores of gold, silver, and mercury from the Pacific and Western States ever brought together. It included also excellent series of the same objects from the more eastern portions of the country. This division of the mineral exhibition amounts to over twenty-five tons in weight, and possesses a bullion-value of probably thirty or forty thousand dollars. A special exhibit of her ores of great scientific and industrial value was made in the Government building by the State of Nevada; afterward presented to the United States. Similar displays and donations of somewhat less magnitude were shown by Montana, Utah, Tennessee, &c.

In addition to the representation of the precious metals, full series were shown by the National Museum of the ores of iron, copper, lead, zinc, tin, nickel; while the marbles and other ornamental stones, plain

and polished, in very great variety, were displayed in large masses. All the varieties of coals are included in the collection, as also the earths and clays, with their applications in the way of brick, tile, terra cotta, &c.

The entire mineral display, as such, was closely crowded in a space of about 10,000 square feet, and would have been more conveniently exhibited in twice that area. Notwithstanding the intrinsic value of much of the material exhibited, no money was expended in actual purchases, the outlays consisting of the necessary expenses incurred by the agents of the Institution in visiting the different mining-regions of the United States to collect the specimens; and their own compensation, the cost of boxing, transportation, &c.

The display of the animal resources of the United States was arranged under five heads: First. All the animals bearing some definite relation to the wants or luxuries of man, and shown, either living, as stuffed specimens, or in plaster casts, photographs, or drawings. Second. The apparatus by which they are pursued and captured. Third. The manner in which they are utilized. Fourth. The results of such utilization in the form of the raw material and their simpler applications. Fifth. The means by which they are propagated and multiplied. About 6,600 feet were occupied by these collections.

The variety of subjects required for so extensive a programme was very great, not less than three thousand subdivisions being provided for in the classification, and represented, for the most part, in more or less detail.

The display included not only the means and appliances of civilized man, but also those used by the Indian for the same purpose. Here, as with the minerals, a large part of the exhibit was presented by persons interested in completing the display.

The special exhibit of the fisheries included models or plaster casts of the various whales, porpoises, seals, and true fishes; samples of the eatable and ornamental shells, the sponges, corals, and the like; isinglass and other products; specimens or models of the different kinds of nets, pounds, fish-traps, hooks, lines, rods and reels, boats of all patterns, models of ships, apparatus for the capture and utilization of the whale, &c. This collection occupied a space of about 10,000 square feet, making three divisions, or an aggregate of 26,600 feet of the mineral, animal, and fishery sections.

The Smithsonian Institution also prepared, in behalf of the Indian Bureau, a representation of the manners and customs of the American aborigines, which was extremely attractive to every one, especially to the foreigner. This collection, exhibited by the Indian Bureau, but which, in accordance with law, becomes a part of the National Museum in charge of the Smithsonian Institution on its return to Washington, occupied at least 7,500 feet, and embraced everything procurable connected with the manners and customs of the Indians, their dress, ornaments, weapons, implements, cooking and household utensils, their modes of progression, illustrations of their religious rites and ceremonies, &c.

The original assignments of space in the Government building were as follows:

	Feet.
War Department.....	11,200
Navy Department.....	10,400
Treasury Department.....	3,000
Agricultural Department.....	6,000
Post-Office Department.....	3,800
Interior Department.....	20,600
Smithsonian Institution and Fish Commission.....	26,600
	81,600

As a total space of about 34,000 square feet was thus required for the collections of the National Museum at the Centennial, it will be seen that they occupied about 41 per cent. of the whole contents of the Centennial building; equivalent to a space nearly double the capacity of the present Smithsonian Institution building.

In this connection it may be mentioned that very little was taken to Philadelphia of the previous exhibits of the National Museum, and that its halls are even now crowded and fully occupied with the original specimens. In addition to this, the basement store-rooms contain collections never exhibited for want of space, and fully equal in extent to those already displayed; among them many thousands of skins of rare and choice quadrupeds and birds of all parts of the world, one of the largest collections of the kind in existence. Other collections, similarly withdrawn from the public examination, include many skeletons of animals, fishes, fossil remains, &c.

Since the close of the Exhibition on the 10th of November, and the official action taken by the National Academy of Sciences on the subject of a transfer to Washington, a very important consideration has been added to the arguments in its favor. It was thought probable that some valuable donations would be made to the several Departments of the Government by foreign commissions, such having been the experience of previous expositions; and Congress appropriated a sum of money to fit up the Armory building, under the direction of the Smithsonian Institution, for the reception of foreign and domestic donations that might thus be added to the collections of the National Museum.

The result, however, was far beyond the anticipations, and the acquisitions thus made have been such as almost to outnumber the previous collections in extent and value. The special displays of the mineral wealth of entire States have been presented to the Government, and numerous collections from private individuals have also been added, all tending to render the representation of the United States extremely rich and full.

It was, however, from foreign sources that the greater part of the new material was received, consisting, in many cases, of nearly the entire exhibits of the countries referred to, so far as they relate to the resources of the respective nations, derived from the animal, vegetable, and mineral kingdoms; also many series illustrating the peculiar habits and characteristics of the people, especially of China, Siam, Japan, Australia, and New Zealand.

Since the close of the Exhibition, the Smithsonian Institution and the Department of Agriculture have been busily engaged, with a large force, in transferring the collections referred to from the different buildings of the commission to that belonging to the Government, the Smithsonian Institution alone having spent already more than two months in this work, with a probability that it will not be completed before the first of February.

The Government building is at present crowded with these additions, notwithstanding the removal of many of the original exhibits; the objects thus presented, it is believed, being sufficient to fill fifty freight-cars to their utmost capacity.

In an appendix I present a somewhat detailed statement of the countries from which the objects referred to have been received. So far, those from which more or less has come to hand are the following:

Argentine Republic; Austria; Africa, (Orange Free State); Belgium; Brazil; Chili; China; Egypt; France; German Empire; Hawaiian Islands; Italy; Japanese Empire; Mexico; Netherlands; Norway; Peru;

Portugal; Russia; Siam; Spain, (Philippine Islands;) Sweden; Switzerland; Tunis; Turkey; United Kingdom and Colonies—Bermuda, Canada, New South Wales, New Zealand, Queensland, South Australia, Tasmania, Victoria; Venezuela.

The value of these collections to the people of the United States cannot be overestimated, consisting as they do of many varieties of ores and minerals, specimens of animal products and materials from the vegetable kingdom, including also the stages of their manufacture and the finished products, as well as, in many cases, the apparatus by which these results are accomplished. Thus nearly all the known varieties of the ores of silver, gold, mercury, iron, copper, lead, tin, zinc, nickel, cobalt, antimony, &c., are represented, with the furnace-products accompanying them, and the resulting metal; the brick, tile, and pottery earth and clays of China, Japan, France, Belgium, Great Britain, and Australia, Brazil, &c., in many cases accompanied by careful analyses of their composition and numerous illustrative specimens of their products; also building-stones, marbles, &c., specimens of artificial stone, mortars, and cements, with the materials producing them, and samples of coals from hundreds of different localities.

Among illustrations of products from the animal industries may be mentioned specimens of leathers from all parts of the world, and from many varieties of animals; wools, graded by their different qualities and applications and prices; furs of various species of animals of Europe, Asia, and Australia; and preparations of Russian isinglass, glues, and gelatines in immense variety.

The wealth of vegetable material is incalculable, embracing as it does the magnificent displays of Brazil, the Argentine Confederation, Australia, Netherlands, and other countries that have excited so much attention during the exhibition.

Among the individual objects may be enumerated samples of the woods of thousands of species of trees, fibers of all kinds, including material for paper and textile fabrics, objects of the materia medica, gums, dye-stuffs, materials for tanning, seeds of every variety of the grains, hemp, flax, cotton, ramie, tobacco, coffee, cocoa, &c., many of them at present new to the United States and giving promise of successful introduction therein. These have been received, in large part, in quantity sufficient for distribution, Russia alone supplying more than two hundred bushels of seeds of every best variety of hemp, oats, wheat, barley, &c. A large amount of material illustrating the habits and customs of other nations has also been received. Notably among these objects may be mentioned the entire exhibit of the King of Siam and that of the commissioners of customs of China. Both of these collections present an exhaustive illustration of the mode of life, habits, and characteristics of the people. Many important collections of educational apparatus and objects have also been presented. The navy department of Russia has furnished samples of cordage, wire-rope, chain-cable, iron-forgings, &c.

The various objects thus presented, after being transferred to the Government building, have been taken possession of by the respective Departments to which they are most appropriate, and by which they would naturally be exhibited in connection with any systematic display that might be authorized by Congress. Although no formal action had been taken by Congress in reference to the acceptance of such donations, yet the fact that an appropriation was made to fit up a building in Washington to receive what might be presented was considered a sufficient warrant for receiving them, especially as their rejection would

have placed the United States in an embarrassing position in respect to its foreign guests.

It is proper to state that the utmost eagerness has been manifested by the representatives of technical, industrial, and educational institutions in the United States in gathering objects of the kind in question, and that in very great part they were prevented from accomplishing their object by the information that the entire exhibits had been presented to the United States, and that application should be made to its representatives for any desiderata. It has been impossible, however, to make any selections with this object, as the time of those concerned has been fully occupied in packing and removing the collections. It will hereafter be desirable to make up from the duplicate material a considerable number of sets of these various substances for distribution whenever the means are furnished for the purpose.

It will readily be understood that the reception and care of so enormous an addition to the original collections already in charge of the Government board would greatly increase their responsibilities and expenditures, and so far as the Smithsonian Institution is concerned, the balance of its appropriation is entirely inadequate to the duty of caring for this material and of transferring it to Washington. After its arrival, too, provision will need be made for its maintenance and exhibition.

In view of the fact that a collection of such magnitude is now the property of the United States, and in large part the spontaneous tribute of respect to it from foreign governments, and that the whole furnishes ample material for an economical and industrial museum of the utmost value, perhaps the finest in the world, it is quite reasonable to hope that Congress will take the steps necessary to make it available to the country, with all the benefits likely to result from its display.

The proper disposition of the collections referred to, so far as they relate to the animal and mineral kingdoms, to ethnology, and to the general industries, would be to place them with the other objects constituting the National Museum in the halls of the Smithsonian Institution, under its charge. Not a tenth part, however, of the total mass could be accommodated in that building, and it therefore becomes necessary to make some provision for the reception and, if possible, for the suitable display of the collections elsewhere, at as early a date as practicable.

It is, of course, possible to store the specimens for a time, but the armory building, which has already been assigned for that purpose, is scarcely sufficient to accommodate the portions in charge of the Smithsonian Institution, even if packed in Philadelphia with special reference to being kept unopened for an indefinite period of time, although, of course, some additional places of deposit could be found.

In addition, however, to the importance of presenting this collection to the public examination at the earliest possible moment, much of the material would be seriously deteriorated by being kept inclosed. This is especially the case with polished steel and iron, and all objects likely to be injured by dampness, such as animals, furs, dresses, &c.

For the above considerations, therefore, it is greatly to be desired that Congress may see fit to authorize the construction of a plain and inexpensive, but fire-proof and durable, building, capable of being erected within a few months and sufficiently large to meet the requirements of the National Museum and the other bureaus of the Government. It is believed that an edifice, in general plan like that adopted for the building at the Centennial, would be best adapted for the purpose, except in

being somewhat more substantial and capable of being heated. By laying a concrete floor directly on the ground, for the exclusion of moisture and vermin, making the exterior of brick, using iron for the beams, joists, rafters, &c. and by having the roof constructed of tongue and grooved boards, and slate or tin above it, and possibly plastered on the under side, it is believed that these several requirements can be most readily met.

The question of a site for the building is also one requiring careful consideration. But for many reasons it would seem desirable that this be placed on the Smithsonian reservation, which has been set aside by Congress for such purposes, and where a building may be erected without raising the inquiry as to the space being needed for the use of any other Department or of its interfering with the plan of an ornamental city park. A space immediately south of the Smithsonian building will admit the erection of a building 300 feet square, and connected with the present Smithsonian edifice by means of its south tower. This with a ground floor of 90,000 feet, and capable of the addition of a gallery containing 30,000 square feet, will furnish an aggregate of 120,000 square feet, which it is thought will permit the proposed display.

In the arrangement of the mineral collections referred to, it is desirable that a special area be devoted to the mineral products of each State, so that the resources of all parts of the country may be shown to the inquirer or investigator, and that as new mining localities are developed in different parts of the country, their illustration, by suitable specimens, may be made in their appropriate places.

The Smithsonian Institution was established on the bequest of a foreigner, who left \$542,000 in trust to the United States to found an establishment "for the increase and diffusion of knowledge among men." Among the other duties specified in the act of incorporation, in 1846, was the charge of the National Museum, as expressed in the following words :

SEC. 6. *And be it further enacted*, That in proportion as suitable arrangements can be made for their reception, all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens belonging, or hereafter to belong, to the United States, which may be in the city of Washington, in whosoever custody the same may be, shall be delivered to such persons as may be authorized by the board of regents to receive them, and shall be arranged in such order, and so classed, as best to facilitate the examination and study of them.

The regents were authorized to determine the plan of operations in other directions, and, through the adherence to the plan of operations authorized by the original board and indorsed by successors, the Institution has become the leading scientific and educational institution of the country, and perhaps, indeed, of the world. Its expenditures are devoted to the prosecution of original researches, the publication of important memoirs, and especially to the maintenance of a system of international exchanges, by which the publications of societies in the United States, including mechanics' institutions, agricultural bodies, &c., as well as those of the United States Government and of the bureaus of the several Departments, are exchanged for the works of corresponding establishments throughout the world, and resulting in the most rapid diffusion of knowledge possible, and in the acquisition of the latest scientific, technical, and industrial publications.

The publications of the Institution are thus exchanged with those of all other countries, and the extensive library it has thus acquired forms part of the Library of Congress, where over seventy thousand of the volumes, of the most valuable character, are to be found. It will thus

be observed that the material result of these operations redounds directly to the advantage of the Government in the improvement and extent of the National Library.

The National Museum, of which the Smithsonian Institution at present has charge, and which occupies all the available space in the Smithsonian building, is composed of the various collections brought in by surveying and exploring expeditions of the United States, including those of Captain Wilkes and hundreds of others, without taking into consideration the special collections made to illustrate the industries of the United States at the Centennial Exhibition.

This National Museum was originally in charge of the Patent-Office, and for its exhibition there an appropriation was made by Congress, from about 1842. When, in 1857, the Government collections then extant were taken charge of by the Smithsonian Institution, the appropriations previously made to the Patent-Office were continued to the Institution, and provision has ever since been made for that purpose. It is, therefore, we conceive, clearly the duty, under the law, of the Smithsonian Institution to take charge of at least "the collections of nature and art, and of foreign and curious research, natural history, and of mineralogy and geology;" and as all the material property of this kind is in charge of the Smithsonian Institution, there would be an eminent propriety in connecting the new building with the old, and directing the Smithsonian to extend over it and its contents its care and supervision.

Estimates and plans for a building of the kind referred to have been prepared, and it is thought the whole work can be accomplished at an expense not to exceed \$260,000; this to include the cost of steam-heating, perhaps, which will of course be necessary to render the building comfortable in winter.

Should the exhibit of the War Department be included in this building, and machinery in motion be required, the same steam-boilers required for the heating of the building would furnish the necessary motive-power.

To sum up, therefore, the material belonging to the United States, for which provision is now required, consists of the collections at present stored in the basement of the Smithsonian building, and hitherto not publicly exhibited, consisting of quadrupeds, birds, fishes, fossils, minerals, &c., and requiring nearly 20,000 square feet of floor. Second, the collections made at the expense of the Centennial fund by the Smithsonian Institution, the Commission of Food-fishes, and the Indian Bureau; for these a space of 40,000 feet is needed. Third, the collections presented to the United States by foreign governments, by States, and by various private exhibitors, needing 20,000 feet. Fourth, allowance for the completion of the exhibits of the mineral wealth of the country by different States of the Union, 20,000 feet, or an aggregate of 100,000 square feet, which space could be used to advantage.

SPENCER F. BAIRD,

Representative Smithsonian and Food-fishes

Department at International Exposition, 1876.

Professor JOSEPH HENRY,
Secretary Smithsonian Institution.

INTERNATIONAL EXHIBITION, 1876.

BOARD ON BEHALF OF UNITED STATES EXECUTIVE DEPARTMENTS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
Washington, D. C., January 31, 1877.

SIR: I take the liberty of addressing you relative to the proposed new building for a National Museum. As representative of this Department at Philadelphia last summer, I became the official recipient of a large quantity of valuable exhibits—presentations from foreign governments to that of the United States—all of which must remain unopened until some suitable place is fitted up for their proper arrangement, as there are no accommodations in the Department for them, and I have great difficulty in getting them stored, even in bulk, so that they will not suffer injury.

These donations are of great value. Having paid considerable attention to vegetable fibers for twenty years, I feel that we have now, in these donations, a collection perhaps equal to that of any existing museum. The collection of native and foreign woods is very extensive; that of the former has never been equaled, in fact it never has been systematically attempted until we collected for the late exposition. We could occupy 8,000 to 10,000 square feet of surface very profitably with the articles on hand.

As to the educational value of museums of natural history, it cannot well be overrated; as a means of diffusing instruction and rational amusement among the people, and giving to the scientific student every possible means of practical examination and study of specimens connected with the nature of his researches, museums stand foremost as practical educators; their influence in promoting and extending manufactures and commerce is being appreciated throughout the world; they are the natural offspring of international exhibitions; they are permanent exhibits of the world's progress.

Sincerely hoping that Congress will, through your committee, make provision for these exhibits,

I have the honor to be, your obedient servant,

WILLIAM SAUNDERS,
Representative Agricultural Department.

Hon. JAMES H. HOPKINS.

List of the more important collections presented by foreign commissioners to the United States Government, and taken charge of in behalf of the National Museum by the Smithsonian Institution.

ARGENTINE REPUBLIC.

DR. ERNESTO OLDENDORFF, *Commissioner.*

Ores of metals, minerals, pottery, tiles, stuffed animals, leathers and hides, nets, fishery products, samples of woods, fibers, seeds, grains, specimens of silk and wool in great variety. This donation embraces almost the whole of the exhibit in Agricultural Hall and a large portion of that in the main building.

AUSTRIA.

DR. FRANCIS MIGERKA, *Commissioner*.

Specimens of mineral-wax (ozockerite) and a variety of mineral and industrial products.

BELGIUM.

COUNT D'OULTREMONT, *Commissioner*.

Some specimens of industrial products.

BRAZIL.

DR. J. M. DA SILVA COUTINHO, *Commissioner*.

Specimens of iron; coal, hides, leather; tiles and pottery, in great variety; specimens in large number of woods, vegetable fibers, substances used as foods; gums, resins, &c. This collection embraces nearly the whole of the immense display in the agricultural building, and a part of that in the main building.

CHILI.

EDWARD SHIPPEN, Esq., *Commissioner*.

A collection of minerals and ores, artificial stone, tiles, terra-cottas, and an extensive variety of grains, seeds, and other vegetable products, embracing by far the largest part of the display of the Chilian government in the main building.

CHINA.

J. L. HAMMOND, *Commissioner*.

The entire exhibit made by the commissioners of customs of China and displayed in the mineral annex. It includes a complete representation of the manners and customs of the Chinese, such as samples of their foods, medicines, clothing; their domestic and household utensils, their ornaments, objects used in their plays and festivities, &c. In the collection are numerous full-sized figures beautifully executed and suitably dressed, representing the different ranks and classes in the community. Many hundreds of clay figures about one foot in height, illustrating the different races of the empire; specimens of cotton and silk in great variety; samples of paper, leather, and the like; samples of pottery, such as vases, tea-pots, pipes; matting, baskets, &c. This collection is of unparalleled interest, and cost the Chinese government a large sum of money. It will require a space fully equal to half of one of the halls of the national museum for its exhibition. There are also three ornamental gateways, three cases, and two pagodas, as used in the main building for purposes of exhibition; musical instruments, specimens of wrought iron and other metals, bamboo-ware, glass; specimens of tea, oils and woods, tobacco and sugar. The entire collection (exclusive of the ornamental gateways and cases) filled twenty-one large wagons.

EGYPT.

E. BRUGSCH, *Commissioner*.

Collection of minerals, tiles, and pottery; garden-products in great variety, samples of wood, and a large collection of objects illustrating the

habits and customs of the natives of Soudan, Nubia, and Abyssinia, such as musical instruments, weapons, clothing, &c.

FRANCE.

CAPTAIN ANFRYE, *Commissioner*.

No collective exhibit was made by the government, but Messrs. Haviland, of Limoges, France, presented a pair of centennial memorial vases valued at \$17,000, and requiring the erection of a special kiln for their production, together with a large panel of tiles.

GERMANY.

MR. BARTELS, *Commissioner*.

Specimens of tiles, cements, asphalt-work, fire-bricks, manufactures in metals and woods from the commissioner, and from Mr. F. Krupp, of Essen, a very extensive display illustrating the mineralogy and metallurgy of the iron trade of Germany, with samples of the different manufactures made at the great gun-works at Essen. This collection is one of the largest and most complete at the exhibition and attracted great attention. A special catalogue of this collection was printed by the exhibitor.

HAWAII.

H. R. HITCHCOCK, *Commissioner*.

Collections of the volcanic and other rocks and minerals, ropes and fibers, tobacco, sugar, oils, models of boats, nets, and vegetable products in large variety.

ITALY.

JOSEPH DASSI, *Commissioner*.

Samples of alabaster, terra-cotta, marbles, &c.

JAPAN.

LIEUT. GEN. SAIGO TSUKMACHI, *Commissioner*.

A valuable series of tiles and other pottery; the large exhibit of the fisheries of Japan in the agricultural building, including both products and apparatus; skins and hides of animals, various food preparations, and a series illustrating the materials and manipulations employed in the manufacture of tea and silks; also, manufactures of bamboo.

MEXICO.

DR. MARIANO BARCENA, *Commissioner*.

The greater part of the exhibit of the natural products of the country as shown in the main building, including the ores of gold and silver, obsidian, woods, fibers, and other vegetable products, pottery, and terra cotta. Among the most notable mineral specimens may be mentioned an iron meteorite weighing 4,000 pounds.

NETHERLANDS.

DR. E. H. VON BAUMHAUER, *Commissioner*.

Agricultural products in considerable variety; specimens illustrating the fisheries of Holland, including cod-liver oil, &c.; tiles, cements, &c.

NORWAY.

WM. C. CHRISTOPHERSEN, *Commissioner*; GENHARD GADE, *Assistant Commissioner*.

A very large collection of ores and other specimens illustrating the metallurgy of iron, copper, nickel, &c.; a collection illustrating the eatable fishes of northern Europe; samples of prepared fishes, samples of food preparations, &c.; great variety of agricultural products.

ORANGE FREE STATE.

CHARLES W. RILEY, *Commissioner*.

A collection of agricultural products.

PERU.

JOSE CARLOS TRACY, *Commissioner*.

A series of the principal food and other vegetable products in that country.

PORTUGAL.

M. JAYME BATALHO REIS, *Agricultural Commissioner*; M. LOURENCO MALHEIRO, *Industrial Commissioner*.

The greater part of the very extensive exhibit of minerals, ores, &c., in the main building; also pottery, samples of industrial products, glass-work, paper, &c., and a full series of the vegetable productions of the kingdom, in nearly two thousand varieties. A portion only of this collection filled sixty large boxes.

RUSSIA.

GEN. CHARLES DE BIELSKY, *Commissioner*; CAPT. NICHOLSKY AND CAPT. SEMELSHKEN, *Assistant Commissioners*.

An enormous collection, illustrating the metallurgy of copper and iron, including different varieties of Russian iron and steel; the very extensive collection of minerals of Siberia, exhibited by the school of mines, and valued at a high price; samples of rope and cordage, pottery, tiles, cement, isinglass, and other products of the sturgeon.

SPAIN.

COL. F. LOPEZ FABRA, *Commissioner*.

A collection of great magnitude, illustrating the mines and mining of coal, iron, copper, and silver, salt, &c., in the kingdom of Spain; a very large number of bricks, tiles, earthenware, and pottery; illustrations of the various fibers, and other materials for basket-work, cordage; industrial products in great variety, including samples of paper, leather, &c.—a complete series, illustrating the agricultural resources of the country.

From the Phillipine Islands, as one of the colonies of Spain, were received samples of native work in the form of baskets, nets, boats, &c., and hemp-fibers.

SWEDEN.

C. JUHLIN-DANNFELT, *Commissioner*.

The entire exhibit of Sweden made in the agricultural department, illustrating the fisheries and agriculture of Sweden, including also

specimens of fish, food-fish preparations, &c., specimens of peat-working machinery, apparatus for deep-sea sounding and dredging, and also for collecting specimens of natural history, photographs of Arctic scenery, &c.

SIAM.

No Commissioner.

A collection, illustrating the products, the industries, &c., of the kingdom of Siam, made for the Centennial Exhibition, with the understanding that it should be presented to the United States at the close. This filled two hundred and sixteen boxes, and embraces many articles of great pecuniary value. This collection, with those from China and Japan, will require a room as large as the upper floor of the Smithsonian Institution for satisfactory display.

SWITZERLAND.

MR. EDWARD GUYER, *Commissioner.*

Specimens illustrating the geology of the Alps and St. Gotthard tunnel.

TURKEY.

G. D'ARISTARCHI BEY, *Commissioner.*

Illustrations of the metal-work of the country; of its mines and minerals, its tiles and pottery, domestic and household utensils; samples of iron and steel, &c.

TUNIS.

G. H. HEAP, Esq., *Commissioner.*

A threshing-machine, such as has been used from the time of the ancient Carthaginians.

UNITED KINGDOM OF GREAT BRITAIN AND IRELAND, INCLUDING COLONIES.

GREAT BRITAIN.

COL. H. B. SANDFORD, *Commissioner.*

A very large collection of the private exhibits of tiles, terra-cottas, bricks and pottery, sanitary ware, as also many industrial products in great variety. Among the more notable articles in the series are collections of tiles and mosaics from Messrs. Minton & Hollins, and many specimens from Messrs. Doulton, of Lambeth, among them several large vases. Some highly important deposits have also been made, subject to recall after a certain period. Chief among these is the allegorical representation of America, a duplicate of that furnished by the Messrs. Doulton to the Albert Memorial in London, embracing several colossal figures. This group is valued at \$15,000. Also, the large terra-cotta pulpit and font, and many other specimens of great variety; an extremely complete and important collection of samples of wools from all parts of

the world, presented by Messrs. John L. Bowes & Brothers, embracing over three hundred varieties, each suitably labeled, with prices marked, &c. A similar collection of wools in the fleece exhibited by Messrs. James Oddy & Sons.

BERMUDA.

A. A. OUTERBRIDGE, Esq., *Commissioner*.

A great variety of specimens of corals, shells, and other marine objects, models of boats, samples of stone and wood.

CANADA.

PROF. A. L. SELWYN, *in Charge of Geological Exhibit*.

An extensive collection of the rocks of British North America, many hundreds of specimens exhibited by the geological survey; specimens of coals from all parts of the Dominion; ores of different kinds, samples of iron, steel, and copper, stone-ware and pottery.

NEW SOUTH WALES.

AUGUSTUS MORRIS, Esq., *Commissioner*.

The extensive exhibit illustrating the mining resources, the natural history, and the botany and agriculture of the province, including a large model of the gold products of the colony up to the years 1875, and specimens of coal-oil, shale, petroleum, &c.

NEW ZEALAND.

JAMES HECTOR, Esq., *Commissioner*.

The entire exhibit of the animal, vegetable, and mineral kingdoms of the colony, and also specimens illustrating its ethnology. Among these specimens is a model of the gold product of the colony and specimens of its coal.

QUEENSLAND.

ANGUS MACKAY, Esq., *Commissioner*.

Model of the gold product of the colony; specimens of ores of copper, iron and gold; a large collection of native woods, fibers, and other products.

SOUTH AUSTRALIA.

S. DAVENPORT, Esq., *Commissioner*.

A full series of all the exhibits from the animal, mineral, and vegetable kingdoms.

TASMANIA.

H. P. WELCH, Esq., *Commissioner*.

Specimens of the iron and other ores; leather, woods, seeds and grains, fibers, wools, &c.

VICTORIA.

SIR REDMOND BARRY, *Commissioner*.

The entire collection of useful economical minerals of the country exhibited by the mining department; specimens of stone-ware and other products; extensive collections of grains, wools, fruits, fibers, and woods; samples of paper, gums, &c.

VENEZUELA.

MR. LEON DE LA COVA, *Commissioner*.

The entire exhibit made by this country of minerals, ores, articles of materia medica, fruits, fibers, extracts, &c.

In general, it may be stated that from the countries mentioned in the foregoing, the exhibits made by the commissioners in behalf of their respective governments, so far as relates to the animal, vegetable, and mineral kingdoms and their applications, have been presented to the United States, in some cases without any exception whatever; in others, all except a few duplicates, which were presented to other foreign commissions or to institutions in the United States. Indeed, the only countries from which absolutely nothing was received were Denmark, Luxembourg, Bahamas, British Guiana, Cape of Good Hope, and Jamaica; the exhibit of these countries being either entirely private property or borrowed from the Colonial Museum in London, and necessarily returned.

H. Rep. 144—3