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ANNUAL REPORT

OF THE

BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION

SHOWING

THE OPERATIONS, EXPENDITURES, AND CONDITION  
OF THE INSTITUTION

FOR THE

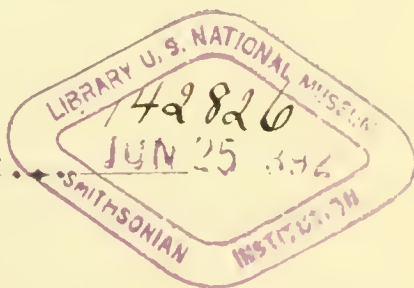
YEAR ENDING JUNE 30, 1889.

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REPORT

OF THE

NATIONAL MUSEUM.



WASHINGTON :

GOVERNMENT PRINTING OFFICE.

1891.

FIFTY-FIRST CONGRESS, FIRST SESSION.

*Concurrent resolution adopted by the House of Representatives May 27, 1890, and by the Senate June 17, 1890.*

*Resolved by the House of Representatives (the Senate concurring), That there be printed of the report of the Smithsonian Institution and National Museum for the years ending June 30, 1888, and June 30, 1889, in two octavo volumes for each year, 16,000 copies; of which 3,000 copies shall be for the use of the Senate, 6,000 for the use of the House of Representatives, and 7,000 for the use of the Smithsonian Institution.*

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REPORT  
OF THE  
U. S. NATIONAL MUSEUM,  
UNDER THE DIRECTION OF  
THE SMITHSONIAN INSTITUTION,  
FOR THE  
YEAR ENDING JUNE 30, 1889.

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REPORT OF THE U. S. NATIONAL MUSEUM FOR THE YEAR  
ENDING JUNE 30, 1889.

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SUBJECTS.

- I. Report of the Assistant Secretary of the Smithsonian Institution,  
in charge of the National Museum, upon the condition and  
progress of the Museum.
- II. Reports of the Curators.
- III. Papers illustrative of the collections in the U. S. National Museum.
- IV. Bibliography.
- V. List of accessions.



U. S. NATIONAL MUSEUM,  
UNDER DIRECTION OF THE  
SMITHSONIAN INSTITUTION,  
*Washington, December 1, 1889.*

SIR: I have the honor to submit herewith a report upon the present condition of the U. S. National Museum and upon the work accomplished in its various departments during the fiscal year ending June 30, 1889.

Very respectfully,

G. BROWN GOODE,  
*Assistant Secretary, in charge of U. S. National Museum.*

Prof. S. P. LANGLEY,  
*Secretary, Smithsonian Institution.*





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SECTION I.

REPORT

UPON THE CONDITION AND PROGRESS OF THE U. S. NATIONAL MUSEUM  
DURING THE YEAR ENDING JUNE 30, 1889.

BY

G. BROWN GOODE.

*Assistant Secretary of the Smithsonian Institution, in charge of U. S. National Museum.*

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## REPORT

### UPON THE CONDITION AND PROGRESS OF THE U. S. NATIONAL MUSEUM DURING THE FISCAL YEAR ENDING JUNE 30, 1889.

By G. BROWN GOODE,

*Assistant Secretary Smithsonian Institution, in charge of U. S. National Museum.*

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#### A.—ORGANIZATION AND SCOPE OF THE MUSEUM.

The National Museum is under the charge of the Smithsonian Institution, and its operations are supervised by the Board of Regents of the Institution.

The Secretary of the Smithsonian Institution is by law the keeper of the collections.

In the act of Congress establishing the Smithsonian Institution are contained the following provisions concerning the scope of the museum to be placed under its charge:

(1) The law specifies certain classes of objects which shall come into the custody of the Institution, viz: All objects of art; all objects of foreign and curious research (*i. e.*, ethnological collections); all objects of natural history; all plants; all geological and mineralogical specimens belonging or hereafter to belong to the United States, which may be in the city of Washington—including the "National Cabinet of Curiosities," at that time in one of the halls of the Patent Office building—in whosoever custody they may be.

(2) It provides that in proportion as suitable arrangements can be made for their reception these objects shall be delivered to such persons as may be authorized by the Board of Regents to receive them.

(3) It provides that they shall be arranged in such order and so classed as best to facilitate their examination and study.

(4) It provides that they shall thus be arranged in the building to be inclosed for the institution.

(5) It authorizes the Regents to obtain new specimens, by exchange of duplicate specimens, and by gift, and directs that they shall be also appropriately classed and arranged.

(6) It constitutes the Secretary of the Smithsonian Institution the keeper of the museum.

## PRINCIPAL SOURCES OF COLLECTIONS.

The collections of the Museum are made up, in large part, of the following materials:

(1) The natural history and anthropological collections accumulated since 1850 by the efforts of the officers and correspondents of the Smithsonian Institution.

(2) The collections of the Wilkes Exploring Expedition, the Perry expedition to Japan, and other naval expeditions.

(3) The collections of the scientific officers of the Pacific Railroad survey, the Mexican boundary survey, and of the surveys carried on by the Engineer Corps of the Army.

(4) The collections of the United States geological surveys under the direction of the United States geologists, Hayden, King, and Powell.

(5) The collections of the U. S. Fish Commission.

(6) The gifts by foreign Governments to the Museum or to the President or other public officers of the United States, who are forbidden by law to retain such gifts in their private possession.

(7) The collections made by the United States to illustrate the animal and mineral resources, the fisheries, and the ethnology of the native races of the country, on the occasion of the International Exhibition at Philadelphia in 1876, and the fishery collections displayed by the United States in the International Fisheries Exhibition at Berlin in 1880 and at London in 1883.

(8) The collections given by the Governments of the several foreign nations, thirty in number, which participated in the exhibition at Philadelphia.

(9) The industrial collections given by numerous manufacturing and commercial houses of Europe and America, at the time of the Philadelphia Exhibition and subsequently.

(10) The material received in exchange for duplicate specimens from the museums in Europe and America, at the time of the Philadelphia Exhibition and subsequently.

## B.—SPECIAL TOPICS OF THE YEAR.

## CLASSIFIED SERVICE OF THE MUSEUM.

A schedule representing the present actual needs of the service was, in response to a Senate resolution, submitted by the Secretary of the Smithsonian Institution. By this it was shown that the sum of \$200,000 at least was required to pay the salaries of the necessary scientific assistants, the clerical force, mechanics, and laborers, for the construction of suitable cases, and for the employés connected with the heating, lighting, electrical, and telephonic service.

## A COLLECTION OF BUSTS OF STATE GOVERNORS IN 1860.

A collection of thirty-two busts, including one of James Buchanan, has been presented to the Museum by Mrs. Anna E. Douglass. The busts were executed by Mr. Henry Dexter, of Cambridge. After the series was completed in plaster, it was placed on exhibition in the Doric Hall of the State House at Boston. The lapse of time and the celebrity of several of the governors have made this collection of great value from an historical stand-point. It is also probable that the sculptor's efforts indicate the best work of the kind produced in the United States up to the year 1860.

## AERONAUTIC COLLECTION.

It is intended to establish in the Museum a Department of Aeronautics, in which will be established (1) balloons and apparatus lighter than air, and (2) models of aerostats heavier than air. The co-operation of the Aeronautic Society of Great Britain has been invited by the Secretary of the Institution, who is especially interested in the subject.

## INCREASE OF THE COLLECTIONS.

A careful estimate of the number of specimens in all the departments of the Museum places the total at 2,864,244. In 1882 the total was estimated at about 192,000. At that time, however, some of the largest collections in the Museum, such as the ethnological collection, had not been brought under control, and no estimate of their extent was then possible; so that the difference between the totals for 1882 and 1889 can not be accounted for solely by the number of specimens received during these years, but includes also the material which was already in the possession of the Museum, but which had not been classified at the time of the first census of the collections in 1882.

## AMERICAN HISTORICAL ASSOCIATION.

The American Historical Association was founded in 1884 for the promotion of historical studies, for the collection and preservation of historical manuscripts, and for kindred purposes in the interest of American history. By an act of Congress approved January 4, 1889, the regents of the Smithsonian Institution are authorized to permit the American Historical Association to deposit its collections, manuscripts, books, etc., in the keeping of the Smithsonian Institution. Under this Act the American Historical Association reports annually to the Secretary of the Smithsonian Institution concerning its proceedings and the condition of historical study in America.

## VISITORS DURING INAUGURATION SEASON.

On March 2 and 5 the Museum and Smithsonian buildings were visited by 106,075 people.

## CINCINNATI EXPOSITION.

The Exposition closed on November 8, 1888. The appropriation available for the use of the Museum was \$40,000. The space occupied by the Museum exhibits was 12,000 square feet. Sixteen departments of the Museum prepared exhibits. The total attendance at the Exposition was 1,055,276, the daily average being 9,593.

## TRANSFER OF DISBURSEMENT OF MUSEUM APPROPRIATIONS.

A statement relating to this matter is made on page 20 of the report for last year. Congress has sanctioned the proposed transfer, and the Museum appropriations will henceforth be disbursed under the direction of the Smithsonian Institution.

## FORMATION OF A FORESTRY COLLECTION.

Through the courtesy of the Secretary of Agriculture Dr. B. E. Fernow, Chief of the Forestry Division of the Department of Agriculture, has accepted the charge of the Section of Forestry in the National Museum. The Section of Forestry was established in April, 1889.

## C.—THE CONDITION OF THE COLLECTIONS.

## INCREASE OF THE COLLECTIONS.

The total number of specimens as estimated in the appended table is now not far from three millions. The increase during this year is much smaller than in any previous year since the completion of the Museum building. At the close of 1882 there were about 192,000 specimens in the collections. The increase during 1883 was about 170,000; during 1884, more than 1,200,000. It was during this year that the extent of the ethnological collection was first estimated and also of the collections of mollusks, insects, aboriginal pottery, birds' eggs, reptiles and batrachians, and mesozoic fossils. During 1885 no estimate was made, this being the year when the fiscal year was adopted in place of the calendar year, and the report for 1885 covered only six months. In 1886 a careful estimate showed a further increase of about 950,000. In 1887 the increase was nearly 250,000, and in 1888 nearly 140,000. The increase during the fiscal year covered by this report is only 60,000. This may be accounted for to a large degree by the fact that, the exhibition halls and storage rooms being filled to their utmost capacity, it has become necessary to cease to a large degree the customary efforts for the increase of the collections.

In order that the tabulated results here presented may not be misleading, it is proper to repeat what has elsewhere been alluded to, namely, that the classification of some of the largest collections, such as



the ethnological collection, had not been made in 1882, and that therefore no figures appear under the head of ethnology for that year or for 1883, although the ethnological collection was at that time probably half as large as it is now. Some of the other collections had not been classified, and thus an increase in the collections more apparent than real appears to have taken place in 1885-'86.

## CENSUS OF THE COLLECTIONS

Table showing the estimated number of specimens in the Museum in 1882 and each year since.

[No census of collection taken in 1885.]

Name of department.	1882.	1883.	1884.	1885-'86.	1886-'87.	1887-'88.	1888-'89.
Arts and industries:							
Materia medica.....		4,000	4,442	4,850	5,516	5,762	5,942
Foods.....		1,244	1,580	822	877	877	911
Textiles.....			2,000	3,063	3,144	3,144	3,222
Fisheries.....			5,000	9,870	10,078	10,078	10,078
Animal products.....			1,000	2,792	2,822	2,822	2,948
Naval architecture.....			600				600
Historical relics.....				1,002	} 13,634	14,640	14,900
Coins, medals, paper money, etc.....				1,005			
Musical instruments.....				400	417	427	427
Modern pottery, porcelain, and bronzes.....				2,278	2,238	3,011	3,011
Paints and dyes.....				77	100	100	109
"The Catlin Gallery".....				500	500	500	500
Physical apparatus.....				250	251	251	251
Oils and gums.....				197	198	198	213
Chemical product.....				659	661	661	688
Ethnology.....			200,090	500,000	503,764	505,464	506,324
American aboriginal pottery.....			12,000	25,000	26,022	27,122	28,222
Oriental antiquities.....							850
Prehistoric anthropology.....	35,512	40,491	45,252	65,314	101,659	108,631	116,472
Mammals (skins and alcoholics)..	4,660	4,920	5,694	7,451	7,811	8,058	8,275
Birds.....	44,354	47,246	50,350	55,945	54,987	56,484	57,974
Birds' eggs.....			40,072	44,163	48,173	50,055	50,173
Reptiles and batrachians.....			23,495	25,344	27,542	27,664	28,405
Fishes.....	50,000	65,000	68,000	75,000	100,000	101,350	107,350
Mollusks.....	33,375		400,000	460,000	425,000	455,000	468,000
Insects.....	1,000		151,000	500,000	585,000	593,000	603,000
Marine-invertebrates.....	11,781	14,825	200,000	350,000	450,000	515,000	515,300
Comparative anatomy:							
Osteology.....	3,535	3,640	4,211	} 10,210	11,022	11,558	11,753
Anatomy.....	70	103	3,000				
Paleozoic fossils.....		20,000	73,000	80,482	84,491	84,649	91,126
Mesozoic fossils.....			100,000	69,742	70,775	70,925	71,236
Cenozoic fossils.....	(Included with mollusks.)						
Fossil plants.....		4,624	7,291	7,429	8,462	10,000	10,178
Recent plants.....				30,000	32,000	38,000	38,459
Minerals.....		14,550	16,610	18,401	18,601	21,896	27,690
Lithology and physical geology .	9,075	12,500	18,000	20,647	21,500	22,500	27,000
Metallurgy and economic geology		30,000	40,000	48,000	49,000	51,412	52,076
Living animals.....						220	491
Total.....	193,362	263,143	1,472,600	2,420,944	2,666,335	2,803,459	2,864,244

## MUSEUM CATALOGUES.\*

The following exhaustive account of the manuscript catalogues of the Museum has been prepared by Mr. Randolph I. Geare:

The catalogue system of the Museum was devised and commenced in April, 1839, by Professor Baird, at Carlisle, Pennsylvania, while engaged in work upon his private collection of birds. The book in which the specimens in this collection were recorded is now Vol. I of the Bird Catalogue, and is in the custody of Mr. Ridgway, Curator of Birds.

When Professor Baird became Assistant Secretary of the Smithsonian Institution in 1850, he brought with him and presented to the National Museum his private collection of birds, and a large general natural history collection, filling an entire baggage car. The bird collection was catalogued between 1839 and 1848.

After Professor Baird accepted the position of Assistant Secretary of the Smithsonian Institution, his system of cataloguing was adopted for the Government collections.

When the cataloguing of the Museum specimens was commenced, it was found more convenient to keep the records of the several collections in one book. For many years all objects other than specimens of natural history were entered in the "Ethnology" series. Vol. XI of this series is the first that was set apart for the entry of material of a specified character, and in it are recorded materia medica specimens. Musical instruments, fishery implements, foods, textiles, and other classes of specimens are also included in this volume. A catalogue for mineral and metallurgical specimens was opened in 1859, for fossils in 1859, for vertebrate specimens in 1840, for birds in 1839, for mammals in 1852, for mollusks in 1859. This early system of cataloguing was, although not entirely satisfactory, under the circumstances necessary; but during later years every special collection has been provided with its own catalogue book, and in some instances the curators have found it convenient to assign a different book to the several groups of objects under their custody. The total number of catalogue books in the Museum, entirely or partly filled, is 151, as shown in the following enumeration:

Series.	No. of catalogue books.	Series.	No. of catalogue books.
Ethnology .....	31	Marine invertebrates .....	12
Mineralogy and metallurgy .....	17	Reptiles and batrachians .....	4
Fossils .....	6	Recent plants .....	2
Birds .....	23	Insects .....	1
Vertebrates .....	7	Graphic arts .....	1
Mammals .....	4	Textiles and foods .....	2
Mollusks .....	24	Transportation and engineering .....	1
Birds' eggs .....	6	Living animals .....	1
Fishes .....	9		
			151

\* Catalogue entries made later than June 30, 1889, are in many instances referred to, the preparation of this statement not having been completed until the end of the calendar year 1889.

The history of the system of cataloguing in the various departments is given in the following detailed statement :

CATALOGUES OF THE DEPARTMENTS IN THE NATIONAL MUSEUM.

ETHNOLOGICAL SERIES.

This series contains thirty-one volumes, with 150,400 entry spaces. The earlier volumes were devoted to the entry of all objects accruing to the Museum other than objects of natural history.

From time to time separate volumes or portions of volumes have been set apart for the entry of material of a specified character.

*Vol. I, Nos. 1 to 3500.*—The first material entered bears date of March 9, 1859, and is a collection of Japanese ethnological objects, presented by the Emperor of Japan, through Commodore Perry.

The last entry is dated February 4, 1867.\*

*Vol. II, Nos. 3501 to 8300.*—This volume covers the period between February, 1867, and February, 1869. Many of its pages are devoted to the entry of material gathered by the Wilkes Exploring Expedition. The entries have not been carried beyond 8277, from 8278 to 8300, both inclusive, having been left for some reason blank.\*

*Vol. III, Nos. 8301 to 14100.*—This volume covers the period between February, 1869, and June, 1874.\*

*Vol. IV, Nos. 14101 to 19825.*—This volume covers the period between June, 1874, and March, 1875.\*

*Vol. V, Nos. 19826 to 24750.*—This volume covers the period between March, 1875, and September, 1876.\*

*Vol. VI, Nos. 24751 to 29700.*—The first entry in the volume is dated October, 1875—a year prior to the last entry in Vol. V, and the volume was completed a year subsequent to the opening of Vol. VII, the next of this series. This volume was probably set apart for the use of some collector in the field.\*

*Vol. VII, Nos. 29701 to 34600.*—This volume covers the period between September, 1876, and January, 1879.\*

*Vol. VIII, Nos. 34601 to 39500.*—This volume covers the period between January, 1879, and January, 1880.\*

*Vol. IX, Nos. 39501 to 44350.*—This volume covers the period between January, 1880, and December, 1880.\*

*Vol. X, Nos. 44351 to 49225.*—This volume covers the period between December, 1880, and January, 1881.\*

In Vol. X is the following note :

The two succeeding volumes of record are devoted (1) to collections under the U. S. Fish Commission and (2) to chemical and other artificial products.

*Vol. XI.*—This volume, the first of the series set apart for the entry of material of a specified character, was assigned to Dr. Flint for the

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\* The original catalogue is in the Department of Prehistoric Anthropology, and a copy has been made for the Department of Ethnology.

entry of specimens of *materia medica*. It covers the period between May, 1881, and February, 1886. The entries in this volume have been carried as far as 54050, although the limit provided for is No. 53925; thus duplicating to the extent of about one hundred and twenty-five numbers the entries in Vol. XII. This volume is in the custody of the Section of *Materia Medica*.\*

*Vol. XII, Nos. 53926 to 57950.*—From January, 1881, to February, 1883. Assigned as follows: From 53926 to 54750 is devoted to the entry of general ethnological objects except the following: Nos. 53926 to 54015. A collection of Japanese plants, from the University of Tokyo; entered in July, 1881. This portion of the catalogue has been used in the Section of Fisheries.

Nos. 54016 to 54079 embrace a collection of Chinese musical instruments from the Chinese Imperial Centennial Commission, and others. These entries were made in December, 1881. This portion of the catalogue has been used in the Section of Fisheries. The entry of musical instruments has been continued in Vol. XX of this series.

Nos. 54080 to 54302 are devoted to the entry of general ethnological objects. This portion of the catalogue has been used in the Section of Fisheries.

Nos. 54303 to 54525 are devoted to the entry of a large collection of fishing implements, models of fishing boats, etc. This material was entered in November, 1882, and was the nucleus of the fisheries collection. This portion of the catalogue has been used in the Section of Fisheries.

Nos. 54526 to 54750 are blank.

Nos. 54751 to 55550 are devoted to the entry of a collection of food-stuffs. This is the first entry of a collection of food-stuff of any considerable extent.

Nos. 55551 to 56425 are devoted to the entry of miscellaneous ethnological specimens, including fishing implements. (With the Section of Fisheries.)

Nos. 56426 to 56774. A collection of ethnological objects from the Alaskan Indians. (With the Section of Fisheries.)

Nos. 56775 to 56825 are blank.

Nos. 56826 to 57201 are used for the entry of a collection of ships

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\* In April, 1883, Vol. XVII of the "Ethnology series" was assigned to the curator of this section for the entry of such chemical specimens as could not be included under the head of *Materia Medica*. Vol. XVII was afterwards transferred to the custody of the Curator of Foods and Textiles, and Vol. XXX of the "Ethnology series" was assigned to the Section of *Materia Medica*. Vol. XVII has served the purpose of a general catalogue for this section from February, 1886—the date of completion of Vol. XI, to May, 1888—the date of the first entry in Vol. XXX. Such entries of *materia medica* specimens as had been made in Vol. XVII were transferred to Vol. XXX, which is still in use in this section. To the end of the last fiscal year 5502 catalogue numbers had been made use of, distributed as follows: In Vol. XI, 4325 numbers, from 49226 to 54051, in Vol. XXX, 677 numbers, from 141201 to 141878.

papers, fittings, and stores; fishing appliances; fishing products. (With the Section of Fisheries.)

Nos. 57201 to 57229. A small collection of fibers and textiles. (With the Section of Fisheries.)

Nos. 57230 to 57250 are blank.

Nos. 57251 to 57628. Food-stuffs, dyes, and textiles in the rough. (With the Section of Fisheries.)

Nos. 57629 to 57950. Fishing implements, including boat fittings, etc.

These several portions of Vol. XII are as yet unbound. A bound copy of this volume, comprising all these portions, is in the Department of Ethnology.

*Vol. XIII, Nos. 57951 to 62750.*—This volume covers the period between June, 1881, and February, 1884. It is devoted to the entry of archaeological material with the exception of about 170 entries of ethnological specimens. A list of the ethnological material so entered has been appended to the copy of Vol. XII, in the Department of Ethnology. The original catalogue is in the Department of Prehistoric Anthropology.

*Vol. XIV, Nos. 62751 to 67575.*—This volume covers the period between December, 1881, and November, 1882, and is occupied with entries of pottery and stone implements exclusively.

The original catalogue is in the Department of Prehistoric Anthropology, and a copy is in the Department of Ethnology.

*Vol. XV, Nos. 67576 to 72375.*—This volume covers the period between November, 1882, and April, 1883, and is devoted to the entry of pottery, stone implements, and other archaeological material.

The original catalogue is in the Department of Prehistoric Anthropology, and a copy is in the Department of Ethnology.

*Vol. XVI, Nos. 72376 to 77350.*—This volume covers the period between January, 1883, and March, 1887, and is devoted to the entry of general ethnological material, except the following numbers: 75001 to 75335 are set apart for the entry of a collection of historical relics, musical instruments, and modern ceramics.

Nos. 76001 to 76500 have been assigned for the use of the Curator of the Section of Naval Architecture.

Nos. 77245 to 77351 are left blank. The original catalogue is in the Department of Prehistoric Anthropology, and a copy has been made for the Department of Ethnology.

*Vol. XVII, Nos. 77350 to 82325.*—This volume covers the period between April, 1883, and June, 1889. Originally assigned to the Department of Materia Medica for the entry of chemicals. Used as a general catalogue of the Section of Materia Medica. Transferred to the Department of Foods and Textiles. Now in use, the entries having been carried as far as 78067. Upon its transfer the Materia Medica speci-

mens which had been entered in this volume, were transferred to Vol. XXX of this series.

*Vol. XVIII, Nos. 82326 to 87300.*—This volume covers the period between April, 1883, and October, 1883. Devoted to the entry of pottery, stone implements, and other archæological material.

The original catalogue is in the Department of Prehistoric Anthropology, and a copy is in the Department of Ethnology.

*Vol. XIX, Nos. 87301 to 92200.*—This volume covers the period between October, 1883, and September, 1884. Devoted to the entry of pottery, prehistoric stone implements, etc.

The original catalogue is in the Department of Prehistoric Anthropology, and a copy is in the Department of Ethnology.

*Vol. XX, Nos. 92201 to 97100.*—Current catalogue of the section of musical instruments. Devoted to the entry of musical instruments, excepting Nos. 92335 to 92654, which are devoted to the entry of the "Washington relics" transferred from the Patent Office. The entries have been carried as far as 94658. This catalogue was commenced in May, 1883.

*Vol. XXI, Nos. 97101 to 102000.*—This volume covers the period between February, 1884, and April, 1887. Devoted to the entry of material assigned to the Department of Prehistoric Anthropology.

*Vol. XXII, Nos. 102001 to 106900.*—The current volume in use by the Section of Fisheries. Separate parts of this volume are assigned respectively to the Sections of Fisheries and Animal Products. The entries in the Section of Fisheries have been carried from 102001 to 103443; in the Section of Animal Products from 104501 to 105045. The first entry in the space assigned to the Section of Fisheries is dated March, 1884; the first in the space assigned to the Section of Animal Products is dated June, 1886.

*Vol. XXIII, Nos. 106901 to 111800.*—From September, 1884, to May, 1885. Devoted to the entry of specimens assigned to the Department of Prehistoric American Pottery.

Original catalogue in the Department of Prehistoric American Pottery; a partial copy in the Department of Prehistoric Anthropology.

*Vol. XXIV, Nos. 111801 to 116700.*—This catalogue covers the period between May, 1885, and June, 1886. Devoted to the entry of specimens assigned to the Department of Prehistoric American Pottery.

The original catalogue is in the Department of Prehistoric American Pottery and a partial copy in the Department of Prehistoric Anthropology.

*Vol. XXV, Nos. 116701 to 121600.*—This catalogue was assigned for the entry of a collection to illustrate the art of taxidermy. The first entry was made on February 9, 1886, and the last entry was made on March 9, 1886. The entries have only been carried as far as 116814.

*Vol. XXVI, Nos. 121601 to 126500.*—This volume was assigned for the

entry of historical collections and coins, and embraces the period from February, 1886, to October, 1889. The entries run as far as 126838, thus encroaching to the extent of about three hundred numbers on the entries of Vol. XXVII.

*Vol. XXVII, Nos. 126501 to 131400.*—The current volume in use in the Department of Ethnology. Commenced in March, 1886. In this volume 300 numbers, beginning with 130000, have been set apart for the entry of material assigned to the Section of Oriental Antiquities.

*Vol. XXVIII, Nos. 131401 to 136300.*—The current volume in use in the Department of Prehistoric American Pottery. Commenced in June, 1886.

*Vol. XXIX, Nos. 136301 to 141200.*—This volume is devoted to the entry of material assigned to the Department of Prehistoric Anthropology. From April, 1887, to October, 1889.

*Vol. XXX, Nos. 141201 to 145900.*—Current volume in use in the Section of Materia Medica. Commenced May, 1888.

*Vol. XXXI, Nos. 145901 to 150400.*—Current volume in use in the Department of Prehistoric Anthropology. Commenced in October, 1889.

#### MINERALOGICAL AND METALLURGICAL SERIES.

In the early volumes of this series are entered minerals, ores, lithological specimens, metallurgical products, and fossils. The first entry is dated April, 1859, and consists of a large collection of minerals, ores, rocks, and fossils; collected by Lieut. J. C. Ives. There are seventeen volumes included in this series. Vols. I, II, III, IV, and X are in the custody of the Department of Minerals, the other volumes of the series are in the Department of Geology.

*Vol. I, Nos. 1 to 3500.*—First entry April 29, 1859; the last entry noted is July, 1861, but there are many entries subsequent to this period. This volume contains many unused numbers.

*Vol. II, Nos. 3501 to 9200.*—First entry June 16, 1862; last entry December 23, 1874.

*Vol. III, Nos. 9201 to 14,500.*—First entry January 7, 1875; last entry February 25, 1884. On the title page is the following inscription:

Catalogue for minerals, rocks, fossils and metallurgical products, beginning with No. 9201, January, 1875.

*Vol. IV, Nos. 14501 to 20300.*—The first entry has no date; the last entry is dated June 10, 1883. There is a note at the end of this volume stating that Nos. 20301 to 25001 were assigned to "Mr. Keirigs (?) collection of rocks." On the title page is "A catalogue of the collection to illustrate the mineral resources of the United States, International Exhibition, 1876." There is an appendix containing many duplicate entries, together with additional entries made at a much later period than the date of completion of the volume.

*Vol. V.*—This volume is devoted to the entry of lithological material. Nos. 20301 to 25000. Entry has been made up to and including 25125, thus duplicating to the extent of one hundred and twenty-five numbers the entries of *Vol. VI.* Nos. 23399 to 24000, both inclusive, are blank.

*Vol. VI, Nos. 25001 to 29649.*—Devoted to the entry of lithological material. This book contains entries in 1881, 1882, 1883, and 1884.

*Vol. VII, Nos. 29651 to 34650.*—This book is devoted to the entry of ores and metallurgical appliances and products, etc. The entries in this volume duplicate those of *Vol. VII* to the extent of about one hundred and twenty-five numbers. First entry December 12, 1882; last entry May 10, 1884.

*Vol. VIII, Nos. 34526 to 39400.*—This volume is devoted to the entry of lithological material. First entry January 11, 1884; last entry May 12, 1888.

*Vol. IX, Nos. 39401 to 44300.*—This volume is devoted to the entry of ores, metallurgical appliances and products, etc. First entry March 24, 1884; last entry October 19, 1885.

*Vol. X, Nos. 44301 to 49200.*—This volume is devoted to the entry of mineralogical material. This catalogue is now in use in the Department of Minerals. First entry April 7, 1884. Up to the end of the last fiscal year, the last entry was 48468.

*Vol. XI, Nos. 49201 to 54100.*—This volume is devoted to the entry of ores and metallurgical appliances and products. Nos. 51674 to 54100, both inclusive, are left blank. The first entry in this book is dated May, 1884, but there are entries as late as November 11, 1889.

*Vol. XII, Nos. 54101 to 59000.*—This volume is devoted to the entry of ores and metallurgical appliances and products, etc. First entry August 8, 1884; last entry February 12, 1886.

*Vol. XIII, Nos. 59001 to 63900.*—Devoted to the entry of ores and metallurgical appliances and products. Nos. 59946 to 63900, both inclusive, are unused. First entry September 4, 1884; last entry October 4, 1889.

*Vol. XIV, Nos. 63901 to 68800.*—Devoted to the entry of ores and metallurgical appliances and products, etc. First entry October 19, 1885; last entry December 18, 1889. From 66651 to the end of the book the numbers are unused. Up to the end of June, 1889, the entries had proceeded as far as No. 66584.

*Vol. XV, Nos. 68801 to 73500.*—Devoted to the entry of lithological material. This catalogue is now in use in the Department of Geology. First entry January 20, 1888; last entry January 8, 1890. From 72890 to the end of the volume is unused. Nos. 70692 to 72889 are all entered under July 19, 1889.

*Vols. XVI and XVII.*—These two volumes are but partially filled by the re-entry of material already entered in some previous volume of



this series. Much material already entered in the earlier volumes of this series has been re-entered in the later volumes. In the Department of Metallurgy and Economic Geology an endeavor seems to have been made to enter all material of a like nature in separate catalogues; thus, in the year 1889 three catalogues (Vols. XI, XIII, and XIV) were in use in this department. All of these books are as yet unfilled.

## INVERTEBRATE FOSSIL SERIES.

*Vol. I.*—The material constituting the nucleus of the Museum collection of fossils was gathered by the various Government Surveys of the country west of the Mississippi. The first entry, dated April 28, 1859, relates to a large collection of fossils gathered by Lieut. J. C. Ives, of the U. S. Army. The volume was completed in 1863. It contains numbers from 1 to 3500, both inclusive. The original is in the custody of the Department of Mesozoic Fossils, and a copy is with the Department of Paleozoic Fossils.

*Vol. II, Nos. 3501 to 8890.*—Original catalogue in the Department of Mesozoic Fossils, and copy with the Department of Paleozoic Fossils. First entry April 3, 1864; last entry March, 1880.

*Vol. III, Nos. 8891 to 13575 to and including 12900.*—Original with the Department of Mesozoic Fossils, and copy with the Department of Paleozoic Fossils. First entry April, 1880; last entry October, 1885.

*Vol. IV, 13576 to 18500.*—Devoted to the entry of Paleozoic Fossils exclusively. First entry June 9, 1883; last entry December 16, 1889.

*Vol. V, Nos. 18501 to 23500.*—This volume is now in use in the Department of Mesozoic Fossils. Up to the end of the last fiscal year the entries had been carried as far as 20262.

*Vol. VI, Nos. 23501 to 28500.*—Now in use in the Department of Paleozoic Fossils. The entries have been carried to 23657.

## BIRD SERIES.

This catalogue is contained in twenty-three volumes of varying sizes, in which up to January, 1890, 117,445 entries had been made. The first volume of this series is a catalogue of the private collection of William M. and Spencer F. Baird. The first entry in this book is dated April, 1839, and there are entries as late as 1851. This volume includes numbers from 1 to 3696. This volume also contains a short list of quadrupeds.

*Vol. II, Nos. 3697 to 7700.*—There are no dates of entry, but this volume probably covers the period between 1851 and 1857.

*Vol. III, Nos. 7901 to 13825.*—From November, 1857, to December, 1860.

*Vol. IV, Nos. 13826 to 23400.*—From August, 1857, to January, 1862.

*Vol. V, Nos. 23401 to 28400.*—The title of this book is as follows: "Museum Catalogue of Birds from No. 23401 to 28400. Received during the years 1860 to 1863, A. D."

The entries are from December 30, 1860, to April 30, 1863.

*Vol. VI, Nos. 28401 to 33200.*—Title is as follows: "Museum Catalogue of Birds received during the years 1863 and 1864."

*Vol. VII, Nos. 33201 to 38700.*—From March 22, 1864, to June 12, 1865.

*Vol. VIII, Nos. 38701 to 45500.*—From June 12, 1865 to March 20, 1867.

*Vol. IX, Nos. 45501 to 50400.*—From February 19, 1867, to March 4, 1868.

*Vol. X, Nos. 50401 to 56000.*—From March 4, 1868, to January 15, 1869.

*Vol. XI, Nos. 56001 to 61200.*—From June, 1869, to May, 1871.

*Vol. XII, Nos. 61201 to 66900.*—The first entry is under the year 1872, the last is dated June 24, 1874.

*Vol. XIII, Nos. 66901 to 72800.*—From June 24, 1874, to February 15, 1877.

*Vol. XIV, Nos. 72801 to 77700.*—From April 6, 1877, to April, 1879.

*Vol. XV, Nos. 77701 to 82500.*—From April, 1879, to August, 1881.

*Vol. XVI, Nos. 82501 to 87320.*—From June 29, 1881, to June 12, 1882.

*Vol. XVII, Nos. 87321 to 92300.*—From June 12, 1882, to November 27, 1883.

*Vol. XVIII, Nos. 92301 to 97300.*—From November 20, 1883, to April 8, 1884.

*Vol. XIX, Nos. 97301 to 102200.*—From April 9, 1884, to January 31, 1885.

*Vol. XX, Nos. 102201 to 107100.*—From January 31, 1885, to January 10, 1886.

*Vol. XXI, Nos. 107101 to 112050.*—From January 10, 1886, to October 24, 1887.

*Vol. XXII, Nos. 112051 to 117000.* From October 24, 1887, to November 22, 1889.

*Vol. XXIII.*—Now in use. Commenced on November 22, 1889. On January 18, 1890, the entries had been carried as far as 117445.

#### VERTEBRATE SERIES (RECENT AND FOSSIL).

In the earlier volumes of this series were entered vertebrate fossils, recent and fossil. Subsequently entire volumes, or portions of volumes, were set apart for skeletons of a particular kind.

*Vol. I, Nos. 1 to 3500.*—Original and copy with the Department of Mammals. Covers the period between 1840 and 1859.

*Vol. II, Nos. 3501 to 8850.*—Original and copy with the Department of Mammals. From March 12, 1859, to May, 1869.

*Vol. III, Nos. 8851 to 15800.*—With the Department of Mammals. From May, 1869, to December, 1877.

*Vol. IV.*—The entries in this volume begin at 14501, thus duplicating

to the extent of about thirteen hundred numbers the entries of the preceding volume. This volume was closed on October 26, 1888, the entries having been carried as far as 18330.

*Vol. V* begins at No. 20751.—This volume is devoted exclusively to the entry of skeletons of mammals. Commenced March 14, 1882. The entries had been carried as far as 24951 on January 18, 1890.

*Vol. VI*.—Separate parts of this volume are set apart for the entry of skeletons of fishes and of reptiles. The entry of skeletons of fishes begins at 25751, dated March 4, 1883, and had been carried as far as 26084 on September 11, 1888. The entry of skeletons of reptiles begins at 29001, dated March 22, 1885, and had been carried as far as No. 29266, on August 31, 1889.

*Vol. VII*.—This is the current catalogue of the Department of Vertebrate Fossils. The entries begin at 30701 and on December 21, 1889, had been carried as far as 30950. This volume is in the custody of the Department of Comparative Anatomy. A card catalogue has been prepared of all vertebrate fossils belonging to the Museum collections, which have been entered in the earlier volumes of this series.

#### MAMMAL SERIES.

A separate series of books has been kept for the entry of mammal skins, with the exception of a few entries in *Vol. I* of the "Bird Series," made in 1840.

*Vol. I, Nos. 1 to 2650*.—Original and copy with the Department of Mammals. Commenced February 12, 1852, and closed prior to April, 1857.

*Vol. II, Nos. 2651 to 7000*.—Original and copy with the Department of Mammals. Covers the period between April, 1857, and October, 1863. The title of this volume is "Mammals from No. 2651 to 7050 in the collection of the Smithsonian Institution, April, 1857 to October, 1863."

*Vol. III, Nos. 7001 to 12250*.—Original and copy with the Department of Mammals. Covers the period between October, 1863, and December, 1874.

*Vol. IV*.—Current volume in use in the Department of Mammals. On January 10, 1890, the entries had been carried as far as 18043.

#### MOLLUSK SERIES.

In the Report of the National Museum for 1885\* Mr. W. H. Dall, Curator of the Department of Mollusks, presents a statement of the registration of specimens from 1859 to 1885, from which it appears that 42,440 entries had been made. During the fiscal year ending June 30, 1886, 18,638 entries were made. In the next fiscal year 10,530 entries were recorded, the latest being No. 83534, in *Vol. xviii*. On

\* Page 110.

June 30, 1888, the catalogues show that 11,799 entries had been made, the last one being No. 98677, in Vol. XXI. From Mr. Dall's report for 1889 it appears that 6,323 entries had been made during the fiscal year ending June 30, 1889, the last number taken up being 102074, in Vol. XXI. Entries were also made during the same year in Vols. XVIII and XX. During the six months ending December 31, 1889, 1,159 additional entries had been made in Vol. XXII.

With a view to economy of time two other catalogue books are kept for the use of assistants working in other offices of the department. This series therefore comprises in all twenty-four volumes.

#### BIRDS' EGG SERIES.

This catalogue comprises six volumes, containing 23,908 entries.

Vol. I, Nos. 15 to 2300, 1858 to 1859; Vol. II, Nos. 2300 to 7900, 1859 to 1864; Vol. III, Nos. 7900 to 12900, 1864 to 1867; Vol. IV, Nos. 12900 to 17975, 1867 to 1878; Vol. V, Nos. 17975 to 22550; Vol. VI, Nos. 22551 to 27450. On January 15, 1890, the entries had been carried as far as 23908.

#### FISH SERIES.

This catalogue is contained in nine volumes. The title of the first volume is "Museum Catalogue of Foreign and Domestic Fish embraced in the collections of the Smithsonian Institution, from the years 1856 to 1861."

Vol. I, Nos. 1 to 3600, December 15, 1856 to 1861; Vol. II, Nos. 3601 to 8700, 1861 to 1872; Vol. III, Nos. 8701 to 16150, 1872 to 1876; Vol. IV, Nos. 16151 to 21100, 1876 to 1878; Vol. V, Nos. 21101 to 25925, 1878 to 1880; Vol. VI, Nos. 25926 to 30725, 1880 to 1882; Vol. VII, Nos. 30726 to 35700, 1882 to 1884; Vol. VIII, No. 35701. The last entry is dated April 13, 1889. Vol. IX begins at 40601. On December 10, 1889 (the last date of entry prior to January 20, 1890), the entries had been carried as far as 41594.

#### MARINE INVERTEBRATE SERIES.

In this department volumes or parts of volumes have been assigned to particular families or orders. The catalogue comprises about twelve volumes.

*Porifera and Protozoa*.—First entry February 28, 1881; last entry February 22, 1890. Number of entries, 6,193.

*Crustacea*.—The first volume of this series, containing Nos. 1 to 2000, was destroyed in the Chicago fire. The first entry in Vol. II is dated November 30, 1872, and is numbered 2001. On January 22, 1890, the entries had been carried as far as 14646.

*Radiata*.—First entry (No. 1) is dated November 19, 1880. On January 22, 1890, the entries had been carried as far as 17377.

*Bryozoa and Ascidia*.—First entry (No. 1) is dated February 11, 1882. On January 22, 1890, the entries had been carried as far as 2842.

*Vermes*.—First entry (No. 1) February 28, 1881. Number of entries up to January 22, 1890, 4780.

## REPTILE AND BATRACHIAN SERIES.

Cataloguing in this department was commenced in 1856. This catalogue consists of four volumes.

Vol. I, from 1 to 2900, covers the period between January, 1856, and July, 1858.

Vol. II, from 2901 to 7875, covers the period between July, 1850, and March, 1873.

Vol. III, from 7876 to 13885, March, 1873, to October, 1884.

Vol. IV, is now in use. On January 20, 1890, the entries had been carried as far as 15619—to the end of June, 1889, to 15523.

## INSECT SERIES.

The Department of Insects has a special catalogue in which are recorded all the additions to the collections since May 18, 1883. A single entry may include several hundred specimens. Up to the end of June, 1889, 486 entries had been made. No attempt has been made to affix catalogue numbers to the immense amount of material belonging to the Department of Agriculture. The material has been classified according to relationship, the several orders, families, genera, etc., being kept in separate trays. The force of this department is now engaged in the preparation of a catalogue based on relationship, in which will be indicated the number of examples of each species in the Museum collection.

## BOTANICAL SERIES.

As has already been stated in connection with Vol. XII of the Ethnology series, Nos. 53926 to 54015 of that volume were taken up in cataloguing (July, 1881) a collection of Japanese plants received from the University of Tokyo. This is the first collection of plants entered under a consecutive series of numbers.

## RECENT PLANT SERIES.

In 1868 the Herbarium of the Smithsonian Institution, already of great extent and value, which had for many years been under the care of Dr. John Torrey in New York City, was placed under the care of the Department of Agriculture, with the understanding that the appointment of the Botanist of the Department of Agriculture (to be charged with its administration) should be subject to the approval of the Secretary of the Smithsonian Institution. Constant additions have been made to the Herbarium since that time by the Smithsonian Institution, and the collection has been also greatly increased through special efforts made by the Botanist of the Department of Agriculture and his assistants.

In 1881, when Prof. Lester F. Ward took charge of the collection of fossil plants in the Museum, he found that the separation of the fossil plants from the recent plants caused him much inconvenience in connection with the identification of the former. Since that time, therefore, it has been customary to retain in the Museum such accessions of recent plants as were needed by Professor Ward and other students in connection with their paleo-botanical work. A second collection of recent plants has thus been formed in the Museum building. It became evident that the existence of two herbaria, each a part of the National Herbarium, and each entirely separate in administration from the other, was undesirable. Dr. George Vasey, Botanist of the Department of Agriculture, has therefore, at the request of the Secretary of the Smithsonian Institution, and with the consent of the Secretary of Agriculture, accepted the position of Honorary Curator of the National Herbarium. The Secretary of Agriculture has also agreed to the proposition of the Secretary of the Smithsonian Institution that, as soon as proper accommodation can be afforded to the National Herbarium in one of the buildings of the National Museum, the portion of the Herbarium now in the Department of Agriculture may be transferred and combined with the collection now in the Museum building.

In Dr. Vasey's report covering the remainder of the fiscal year (March 1 to June 30, 1889,) he states that no catalogue of the plants contained in the Herbarium has yet been made, but that they are properly arranged in orders, genera, and species, and are labeled so as to be readily accessible.

In March, 1889, the catalogue of recent plants received in the National Museum, contained 175 entries. No idea, however, of the extent of the collection can be formed by this statement, since the first two entries comprised 25,000 specimens, these representing the Ward and Joad collections. With the beginning of the fiscal year 1889-1890 a new catalogue will be opened by Dr. Vasey for the entry of recent plants.

#### FOSSIL PLANT SERIES.

The cataloguing of fossil plants was first systematically commenced in the year 1881 (?) by Prof. Leo Lesquereux, of Columbus, Ohio.

Several entries of fossil plants are found in the early volumes of the "Fossil Series" of catalogues.

There is an extra catalogue kept, in which is entered the material that had accumulated in the interval between the time at which Professor Lesquereux discontinued the work of cataloguing and the period at which it was resumed by Mr. Knowlton. This catalogue is only provisional, the specimens when identified being re-entered in the regular catalogue of the department.

#### GRAPHIC ART SERIES.

The Section of Graphic Arts has a special catalogue, in which up to January 7, 1890, 3,233 entries had been made.

## FOOD AND TEXTILE SERIES.

In the custody of this department are two volumes of a special catalogue. In these, special series of numbers have been set apart for the various kinds of material placed in the department. The two volumes contain about 9,900 numbers, about two-thirds of which have thus far been utilized. It will be observed that a part of Vol. XII of the Ethnology series (Nos. 54751 to 55550) is devoted to the entry of a collection of foods and other specimens. This appears to have been the first set of numbers devoted to the cataloguing of this material.

## TRANSPORTATION AND ENGINEERING SERIES.

To this section a special catalogue has been assigned. The first entry is dated March 10, 1885, and has reference to the locomotive "John Bull," the gift of the Pennsylvania Railroad Company. Up to the end of the fiscal year ending June 30, 1889, 125 entries had been made. In this section the work of cataloguing has never been carried on systematically, owing to the pressure of other work.

## LIVING ANIMAL SERIES.

This department has a special catalogue. The first entry is in October, 1887. On June 30, 1889, 341 entries had been made.

## FORESTRY SERIES.

The cataloguing of specimens in the forestry collection has not yet been commenced.

## CATALOGUE ENTRIES DURING THE YEAR ENDING JUNE 30, 1889.

A catalogue entry, as explained in previous reports, may relate to a single specimen or to several hundred or even several thousand specimens, as frequently happens in regard to mollusks, plants, marine invertebrates, fossil and other groups of objects. The total number of entries made by the curators of the several departments in the Museum catalogue books during the year is 23,442, as shown in the accompanying table:

*Table showing the number of catalogue entries made during the year.*

Departments.	Total No. of entries.
Arts and Industries:	
Materia Medica .....	433
Foods .....	35
Textiles .....	78
Animal products .....	22
Coins, medals, paper money, etc. ....	323

*Table showing the number of catalogue of entries made during the year—Continued.*

Departments.	Total No. of entries.
Ethnology.....	721
American Aboriginal Pottery.....	634
Prehistoric Anthropology.....	1,400
Mammals.....	635
Birds.....	2,971
Birds' Eggs.....	118
Reptiles and Batrachians.....	784
Fishes.....	1,476
Mollusks.....	6,323
Insects.....	78
Marine Invertebrates.....	3,214
Comparative Anatomy.....	1,054
Invertebrate Fossils:	
Paleozoic.....	583
Mesozoic.....	178
Fossil Plants.....	7
Recent Plants.....	24
Minerals.....	631
Lithology and Physical Geology.....	1,135
Metallurgy and Economic Geology.....	4132
Living Animals.....	17
Total.....	23,442

#### ARRANGEMENT OF COLLECTIONS AND ASSIGNMENT OF SPACE.

The development of the collection of objects illustrating the graphic arts has been so rapid that it has been found necessary to enlarge the limits of the space assigned for its display. In 1888 one-half of the northwest range was assigned to this collection. During the year it has been found necessary to devote the entire range to the Section of Graphic Arts, the casts of Mexican sculptures having been removed to the Smithsonian building. The east side of the northwest range is devoted to the technical collection, and on the west side are shown the methods of drawing and painting and the historical collection of relief engravings, intaglio engravings, and lithographs. Mr. Koehler in his report discusses at some length the need of additional space, in view of the fact that the space now provided is not sufficient for the installation of the material already on hand.

Mr. J. E. Watkins, Curator of Transportation and Engineering, has re-arranged the collection under the following classes: (1) Objects and implements for burthen-bearing by man and animals; (2) Objects and implements of human and animal traction (street railway cars excepted); (3) Originals, models, and drawings of stationary steam-engines; (4) Originals, models, and drawings of locomotives; (5) Models and drawings of passenger-freight cars; (6) Originals, models, and drawings illustrating the development of the American rail and track; (7) Models, relics, and drawings showing the beginnings of the steam-boats and



development of marine steam engineering; (8) Maps, showing the beginning and extension of the American railway system; (9) Electrical machine; (10) Air-ships, etc. In view of the progress which has been made in solving problems that have arisen in connection with electric propulsion, both on land and water, during the last few years, it would seem proper to begin to collect objects illustrating the early history of the devices which have gradually been developed into the motors, etc., now practically successful and in commercial use.

In February space was assigned to the Section of Oriental Antiquities on the north side of the west hall, and Dr. Cyrus Adler, Assistant Curator, has commenced the installation of specimens.

In April a section devoted to forestry collections was organized. Dr. B. E. Fernow, chief of the forestry division in the Department of Agriculture, has been appointed Honorary Curator. He has proposed the following classification for the exhibition series of specimens:

(1) Relation of forestry to other industries and conditions of life; (2) Description of the objects upon which forestry is to be applied, and of the raw material; (3) Methods of utilization and application; (4) Methods of production and management; (5) Bibliography. A few objects have already been placed on exhibition on a panel 12 feet by 14 feet. These are described in Dr. Fernow's report.\*

The materia medica collection is installed in the southeast range of the Museum, and occupies a floor space of about 1,600 square feet.

The collection comprises the following exhibits:

(1) Medicinal forms; to illustrate the forms in which medicinal substances appear in commerce or are prepared for administration by the pharmacist.

(2) Official drugs. The crude medicinal articles, and their derivatives, authorized by the pharmacopœias, including non-official varieties of official drugs; the whole arranged under the following heads:

Animal Products. Vegetable Products. Organic Chemical Products. Inorganic Products. Mineral Waters and their constituents. Indigenous, or Domestic Drugs. Medicines of the North American Indians. Mexican Drugs. West Indian Drugs. South American Drugs. East Indian Drugs. Chinese, Japanese, and Korean Medicines.

In the Department of Ethnology has been organized a collection of charts, maps, lay figures, busts, portraits, and photographs, designed to illustrate the spread of various types of mankind. Professor Mason, the Curator of this department, has also prepared an ethnographical collection illustrating the arts and industries of the Koloshan, Haidan, and Tsimshian stocks of Indians, based upon the report of Ensign A. P. Niblack upon the Coast Indians of Alaska, published in the Museum report for 1888. Mr. Walter Hough, of this department, has brought

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\* Section II.

together and arranged in the exhibition hall a series of the fire-making tools of most of the American aborigines. The Curator has extended his studies on the subject of human transportation.\*

Mr. Thomas Wilson, Curator of Prehistoric Anthropology, has proposed a re-arrangement of the exhibition hall on the second floor of the Smithsonian building. His plans are set forth in his report.†

Mr. True, Curator of Mammals, has continued the work of arranging the hall under his charge. Groups of prairie dogs and opossums have been thus treated during the year. Several special cases have been constructed for this department. Some important changes in the arrangement of the exhibition series have been effected. These are explained in detail in the report of the Curator.

The systematic arrangement of special bird exhibits has been accomplished by Mr. Robert Ridgway, Curator. These are described at length in his report.† The arrangement of the collection of skins is considered by Mr. Ridgway to be exceedingly unsatisfactory, on account of the lack of storage room. An apartment in the south tower has been assigned to this department.

Capt. Charles E. Bendire, Curator of Birds' Eggs, has continued the arrangement of the reserve series and also of the series of eggs of foreign birds.

A thorough re-arrangement of the entire collection of reptiles and batrachians has been found necessary, and Dr. Leonhard Stejneger, Curator, has already made a beginning with the reserve series of North American species. Lack of proper accommodations necessarily renders any work of this kind slow and difficult.

The collection of fishes is very inadequately provided for. Dr. T. H. Bean, Curator, states that it has become necessary to place the jars containing the specimens on the floor, thereby putting them in danger of being broken, and causing much extra labor and confusion.

Mr. William H. Dall, Curator of Mollusks, has arranged for exhibition the Lea collection of *Unionidæ*, and he hopes to be able to complete during the summer the arrangement of this magnificent collection of fresh water mussels.

In the Department of Insects there has been unusual activity in the arrangement and preparation of collections for exhibition. Work upon a general exhibition collection to be permanently placed in the Museum has been carried on. An additional laboratory has been completed for the use of this department by the construction of a room over the Public Comfort room. The arrangement of the reserve collection is progressing. The re-arrangement of the Coleoptera has been continued, and the family Carabidæ has been entirely re-arranged, occupying sixty-eight boxes in the reserve collection and eighteen double boxes in the duplicate series.

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\* See paper on this subject in the Museum report for 1887, p. 237.

† See section II.

Mr. Richard Rathbun, Curator of Marine Invertebrates, has carefully examined the alcoholic collection, and has arranged in systematic order the crustaceans, worms, holothurians, ophiurans, erinoids, hydroids, molluscoids, and sponges. It is his intention to bestow the same care upon the other groups during next year. He has also found time to revise the collection of duplicate specimens. Mr. Rathbun reports the entire collection to be in an excellent state of preservation, and available for reference or study.

Definite plans for the formation of an exhibition series of anatomical preparations of soft parts of specimens have been prepared by Mr. True, Acting Curator of Comparative Anatomy. It has, however, been found necessary to postpone the execution of this plan until next year. The large wall case in the exhibition hall of this department has been enlarged by the addition of a wing extending toward the west. This has made possible an improvement in the arrangement of the mounted skeletons of Primates and Carnivores. The arrangement of the collection of Vertebrate Fossils has occupied a considerable portion of the time of the Curator and of Mr. Lucas, Assistant Curator.

Mr. C. D. Walcott, Curator of Paleozoic Fossils, has, on account of his work as paleontologist of the Geological Survey, been unable to devote much time to the arrangement of the Museum collection. The space allotted to the exhibition series of this department is now nearly filled. The arrangement is, however, in a large measure provisional, and will require modification. Mr. R. R. Gurley has commenced the arrangement of the graptolites. It is Mr. Walcott's intention to arrange as soon as possible the large series of Lower and Middle Cambrian fossils which he has collected from Newfoundland.

Dr. C. A. White, Curator of Mesozoic Fossils, states that the collections under his care are in better shape than they have ever been before. Early in the year 1889 this department was furnished with ten glass top frames. These are now filled with specimens consisting chiefly of types of species, descriptions of which have been published in the reports of the U. S. Geological Survey.

The Herbarium is under the care of Dr. George Vasey, Botanist of the Department of Agriculture. He states in his report that the collection of herbarium specimens in the Department of Agriculture, forming a part of the National Herbarium, is exhibited in wall cases, occupying a space of about 85 running feet. This collection is mounted on 120,000 sheets. These are arranged according to orders, genera, and species, and are readily accessible. There are still a large quantity of specimens to be mounted and added to the collection, besides a great number of duplicates for distribution and exchange.

The collection of building and ornamental stones, as now installed, fills thirteen door screen cases, one wall case, two pyramids, and the tops of three table cases. The collections of rock and rock-forming minerals are arranged on one pier case and seven slope-top table-cases.

The systematic arrangement of the collections of dynamic and historical geology has not yet been commenced, owing to the lack of cases.

The entire southwest court is now reserved for the exhibition series of metals and ores. The space is still insufficient for the proper exhibition of the collection, and it has been found necessary to withdraw fully one-third of the specimens intended for exhibition, and divide them between the reserve and duplicate series.

The wooden structure adjoining the Smithsonian building on the south has become so overcrowded with specimens of living animals that numerous offers of additional specimens have necessarily been declined.

A room for tropical reptiles, quadrupeds, and other animals has been added.

The establishment of a National Zoological Park has been authorized by Congress, and the specimens now exhibited in this wooden shed will doubtless be removed to the park as soon as the necessary arrangements for their reception shall have been completed.

During the month of May the general storage room was removed from the Armory building, to make room for the offices of the U. S. Fish Commission, to the storage shed, west of the Armory building, and the storage separated into three sections.

#### D.—THE MUSEUM STAFF.

The staff of the National Museum includes two classes, scientific and administrative, the former consisting of curators, honorary curators, acting curators, assistant curators, assistants, aids; the latter consisting of chiefs of administrative departments, clerks, copyists, messengers, and the superintendent of buildings, with the watchmen, mechanics, and laborers under his supervision.

##### THE SCIENTIFIC STAFF.

There are now thirty-four organized departments and sections under the care of curators, or acting curators, and assistant curators.

##### DIVISION OF ANTHROPOLOGY.

DEPARTMENT OF ARTS AND INDUSTRIES: The Assistant Secretary acting as curator, with adjunct curatorships as follows:

GRAPHIC ARTS: S. R. Koehler, Acting Curator.

TEXTILE INDUSTRIES: Romyn Hitchcock, Acting Curator.

TRANSPORTATION AND ENGINEERING: J. Elfreth Watkins, Curator.

HISTORICAL COLLECTIONS: A. Howard Clark, Curator.

MATERIA MEDICA: Dr. J. M. Flint, U. S. Navy, Honorary Curator.

FISHERIES: R. Edward Earll, Acting Curator.

FOODS: W. O. Atwater, Honorary Curator.

ANIMAL PRODUCTS: R. Edward Earll, Acting Curator.

NAVAL ARCHITECTURE: J. W. Collins, U. S. Fish Commission, Honorary Curator.

FORESTRY: B. E. Fernow, Chief of the Division of Forestry, Department of Agriculture, Honorary Curator.

DEPARTMENT OF ETHNOLOGY: Otis T. Mason, Curator; Walter Hough, Aid.

SECTION OF ORIENTAL ANTIQUITIES: Paul Haupt, Johns Hopkins University, Honorary Curator; Cyrus Adler, Johns Hopkins University, Assistant Curator.  
 DEPARTMENT OF AMERICAN ABORIGINAL POTTERY: W. H. Holmes, Bureau of Ethnology, Honorary Curator.  
 DEPARTMENT OF PREHISTORIC ANTHROPOLOGY: Thomas Wilson, Curator.

## DIVISION OF ZOOLOGY.

DEPARTMENT OF MAMMALS: F. W. True, Curator.  
 DEPARTMENT OF BIRDS: Robert Ridgway, Curator,  
 DEPARTMENT OF BIRDS' EGGS: Capt. Chas. E. Bendire, U. S. Army, Honorary Curator.  
 DEPARTMENT OF REPTILES AND BATRACHIANS: Leonhard Stejneger, Curator.  
 DEPARTMENT OF FISHES: Tarleton H. Bean, U. S. Fish Commission, Honorary Curator; Barton A. Bean, Aid.  
 DEPARTMENT OF VERTEBRATE FOSSILS: O. C. Marsh, U. S. Geological Survey, Honorary Curator.  
 DEPARTMENT OF MOLLUSKS: W. H. Dall, U. S. Geological Survey, Honorary Curator; R. E. C. Stearns, Adjunct Curator.  
 DEPARTMENT OF INSECTS: C. V. Riley, Department of Agriculture, Honorary Curator; Martin Linell, Aid.  
 DEPARTMENT OF INVERTEBRATES: Richard Rathbun, U. S. Fish Commission, Honorary Curator.  
 DEPARTMENT OF COMPARATIVE ANATOMY: F. W. True, Acting Curator; F. A. Lucas, Assistant Curator.  
 DEPARTMENT OF LIVING ANIMALS: William T. Hornaday, Curator.  
 DEPARTMENT OF INVERTEBRATE FOSSILS:  
 PALEOZOIC: C. D. Walcott, U. S. Geological Survey, Honorary Curator.  
 MESOZOIC: C. A. White, U. S. Geological Survey, Honorary Curator.  
 CENOZOIC: W. H. Dall, U. S. Geological Survey, Honorary Curator.

## DIVISION OF BOTANY.

DEPARTMENT OF FOSSIL PLANTS: Lester F. Ward, U. S. Geological Survey, Honorary Curator.  
 DEPARTMENT OF RECENT PLANTS: George Vasey, Botanist of the Department of Agriculture, Honorary Curator.

## DIVISION OF GEOLOGY.

DEPARTMENT OF MINERALS: F. W. Clarke, U. S. Geological Survey, Honorary Curator; William S. Yeates, Assistant Curator.  
 DEPARTMENT OF LITHOLOGY AND PHYSICAL GEOLOGY: George P. Merrill, Curator.  
 DEPARTMENT OF METALLURGY AND ECONOMIC GEOLOGY: Fred P. Dewey, Curator.

Of the curators and acting curators thirteen receive salaries from the Museum. Of the remainder, seven are officially connected with the U. S. Geological Survey, four with the Department of Agriculture, three with the U. S. Fish Commission, and one each with the U. S. Army, U. S. Navy, and Bureau of Ethnology.

## PERSONNEL OF THE SCIENTIFIC DEPARTMENTS.

During the year a section of Forestry has been established, and with the consent of the Secretary of Agriculture, Dr. B. E. Fernow, chief of the Forestry Division of the Department of Agriculture has been appointed curator of the collection.

On April 5 Mr. L. O. Howard, of the Entomological Division of the Department of Agriculture, was appointed Acting Curator of insects during the absence of Professor Riley, Honorary Curator, in Europe.

On April 21 Mr. F. H. Knowlton, Assistant Curator of fossil plants, was furloughed for one year without pay, in order to enable him to prosecute some special botanical work, and to serve upon the editorial staff of the Century Dictionary. Mr. Knowlton has, however, kindly offered to continue assisting in the care of the collections until an appointment has been made.

Dr. H. C. Yarrow, who for many years has served as Honorary Curator of the Department of Reptiles, resigned on February 9, and Dr. Leonhard Stejneger, Assistant Curator of birds, was on March 1 appointed Curator of the Department of Reptiles.

Dr. George Vasey, botanist of the Department of Agriculture, was appointed honorary Curator of botany in March, and in that capacity controls the botanical collections in the National Museum and in the Department of Agriculture forming the National Herbarium. Prof. Paul Haupt, Honorary Curator of the Section of Oriental Antiquities, has been designated representative of the Smithsonian Institution at the Eighth International Congress of Orientalists, to meet in Stockholm and Christiania from September 2 to 13. Prof. Otis T. Mason has been detailed to visit the principal ethnological museums in France, Germany, Denmark, and England for the purpose of making arrangements for exchange of specimens and incidentally of studying the methods of installation adopted in them. Mr. Thomas Wilson will also visit the principal archæological museums in France for similar purposes, and will attend the meetings of the International Anthropological Congress.

Mr. J. B. Smith, Assistant Curator of the Department of Insects, resigned in April to accept a professorship in Rutgers College, New Brunswick, New Jersey, and the position of entomologist of the State Agricultural Experiment Station, and Mr. Martin Linell has been appointed aid in this Department.

#### THE ADMINISTRATIVE STAFF.

The administrative affairs of the Museum are under the direct charge of the Assistant Secretary. The arrangement of the administrative offices is as follows:

Department of accounts, W. V. Cox, chief clerk.

Department of correspondence and reports, R. I. Geare, executive clerk.

Department of registry and storage, S. C. Brown, registrar.

Department of property and supplies, J. Elfreth Watkins, engineer of property.

Department of publications, A. Howard Clark, editor of Proceedings and Bulletin.

The care of the buildings, the supervision of the mechanics, watchmen, laborers, and cleaners, and many related matters, are under the charge of Mr. Henry Horan, superintendent of buildings. Mr. C. A. Steuart is assistant superintendent.

The preparation and mounting of specimens for the exhibition series consumes the time of several skilled employés. Casts of specimens have often to be made, when

the original objects can not be retained in the Museum. Protographs of objects not infrequently supply the place of the object itself in the exhibition cases. The work incidental to such preparation is now of great importance and a department or preparation has been formed as here indicated :

Department of preparation: Taxidermists, W. T. Hornaday in charge, Joseph Palmer, William Palmer, Henry Marshall, George Marshall, A. J. Forney. Osteologist, F. A. Lucas. Photographer, T. W. Smilie. Draughtsmen, W. H. Chandler and W. H. Burger. Modeler, J. W. Hendley. General preparators, E. H. Hawley and T. W. Sweeny.

Statements of the work accomplished in these departments during the year are given further on in this report.

#### CLASSIFIED SERVICE OF THE MUSEUM.

In response to a resolution\* of the Senate asking for a schedule of the classified service of the officers and employés of the National Museum, the Secretary of the Smithsonian Institution addressed the following letter to the Hon. John J. Ingalls, president *pro tempore* of the Senate, transmitting a schedule which, upon very careful consideration, seemed to represent the actual needs of the service.

\* U. S. SENATE, *October 9, 1888.*

#### THE NATIONAL MUSEUM.

\* \* \*

Mr. WILSON, of Iowa. I offer the following resolution, and ask for its present consideration :

*Resolved*, That the Regents and Secretary of the Smithsonian Institution, and Director of the United States National Museum be, and hereby are, directed to formulate and transmit to the Senate at their earliest convenience, a schedule of classified service of the officers and employés of the National Museum, arranged according to duty and salary, as the same is required for the proper working of the Museum.

Mr. HOAR. From what committee does that come ?

Mr. WILSON, of Iowa. From none. It is a resolution that I introduced in order to get the information.

Mr. HOAR. I should like to inquire for information—I have no doubt it is all right—have we authority to impose directions on the Regents of the Smithsonian Institution and the Director of the National Museum ?

Mr. WILSON, of Iowa. The resolution relates mainly to the National Museum, which, I suppose, we have a right to call upon for information. It might be different as to the Smithsonian Institution, but as the resolution relates to the Museum, I presume we have that authority. There is no reason why we should not have it.

Mr. HOAR. We have authority to give such directions to the heads of Departments, which rests on unbroken usage from the beginning of the Government, but I am not aware that one House of Congress has a right to order an executive officer of the Government to do anything for its convenience, especially that we have such control over the Regents of the Smithsonian Institution. It may be there is such authority reserved by statute. I shall not interpose an objection to the resolution, because I know personally the officers referred to would be anxious to communicate the information, and it is the desire of the Senator from Iowa.

The PRESIDENT *pro tempore*. If there be no objection to the present consideration of the resolution, the question is on agreeing to the same.

The resolution was agreed to.

## SMITHSONIAN INSTITUTION,

March 2, 1889.

SIR: In response to the Senate resolution asking for "a schedule of the classified service of the officers and employés of the National Museum," I have the honor to transmit the accompanying schedule, which represents the present actual necessities of the service.

The service for the fiscal year of 1887-'88 was reported upon in a letter to the Speaker of the House of Representatives, dated December 1, 1888 (H. R. Mis. Doc. No. 55, Fiftieth Congress, second session).

In this the aggregate expenditures for service were shown to have been \$122,750.47, of which sum \$97,493.32 was paid from the appropriation for preservation of collections, \$19,203.79 from that for furniture and fixtures, and \$6,053.36 from that for heating, lighting, and electrical and telephonic service.

A schedule of the number of persons employed in the various departments of the Museum was also given in this letter (pages 4, 9, 11). This schedule should, however, be regarded only as an approximate one, since many of the employés were actually engaged only a part of the year, and others were temporarily transferred to the pay-rolls of the Cincinnati Exhibition and were engaged in special work in connection with that exhibition.

It is estimated that the aggregate expenditures for services for the present fiscal year (1888-'89) will be \$129,710, of which amount \$103,000 will be paid from the appropriation for preservation of collections, \$20,000 from that for furniture and fixtures, and \$5,710 from that for heating, lighting, and electrical and telephone service.

In the schedule herewith transmitted it is shown that for the proper working of the Museum the amount required for services would be as follows:

For salaries of scientific assistants.....	\$56,300.00
For clerical forces.....	36,920.00
For services in preparing, mounting, and installing the collections.....	22,060.00
For services in policing, caring for, and cleaning the buildings.....	36,740.00
For services in repairing buildings, cases, and objects in the collections..	14,163.50
For salaries and wages in designing, making, and inspecting cases and other appliances for the exhibition and safe-keeping of the collections.	18,337.50
For services in connection with the heating, lighting, and electrical and telephonic service .....	6,620.00
For services of miscellaneous employés, including draughtsmen, messengers, etc.....	7,980.00
Total.....	199,121.00

The increase in the total expenditure, as indicated, is due partly to the addition of a number of officers to the scientific staff, and also to the necessity for a few additional clerks, and a considerable number of watchmen, laborers, cleaners, and messengers, whose services are essential to the safety of the collections, as well as to provide for the cleanliness and proper care of the buildings and for the comfort of visitors.

The rates of pay indicated are in most cases considerably lower than are customarily allowed for a similar service in the Executive Departments.

In the schedule now presented, expenditure for services only is taken into consideration.

No attempt has been made to present the needs of the Museum in regard to the purchase or collecting of specimens, the purchase of general supplies, preservatives, materials for mounting and installing col-



lections, books, exhibition cases, furniture, fuel and gas, the maintenance of the heating and lighting appliances, freight and cartage, traveling expenses of collectors and agents, etc.

For these various purposes the expenditure in the last fiscal year amounted to \$45,249.53, and that for the present fiscal year will, it is estimated, amount to about \$48,000, a sum very inadequate to the needs of the service.

It does not include the expenditures for printing the labels and blanks, and proceedings and bulletins of the Museum, for which the appropriation for many years past has been \$10,000, and for which I have asked \$15,000 for the coming fiscal year.

I must not omit to call your attention to the fact that owing to the peculiar constitution of the Museum as a scientific establishment, it has hitherto been possible to secure a special economy, owing to the fact that its officers and employes are not scheduled as in the Executive Departments.

In thus presenting, in obedience to the request of the Senate, a schedule of a durable organization of the service, I wish to remark, emphatically, that there are pressing needs in other directions—needs that merit the serious consideration of Congress, in order that the National Museum may be enabled to maintain a satisfactory position in comparison with those of European nations.

I have the honor to be, your most obedient servant,

S. P. LANGLEY,  
*Secretary.*

Hon. JOHN J. INGALLS,

*President pro tempore of the Senate.*

*Schedule of the classified service of the officers and employés of the United States National Museum, arranged according to duty and salary, as required for the proper working of the Museum.*

Designation.	Compensation.
<i>Scientific staff.</i>	
Secretary Smithsonian Institution, director <i>ex officio</i> .....	.....
Assistant secretary Smithsonian Institution, in charge of National Museum .....	\$4,000.00
Curator and executive officer .....	3,000.00
Five curators, at \$2,400 .....	12,000.00
Five curators, at \$2,100 .....	10,500.00
Four assistant curators, at \$1,600 .....	6,400.00
Four assistant curators, at \$1,400 .....	5,600.00
Four aids, at \$1,200 .....	4,800.00
Six aids, at \$1,000 .....	6,000.00
Special service by contract .....	4,000.00
	56,300.00
<i>Clerical staff.</i>	
Chief clerk .....	2,200.00
Four chiefs of divisions: Correspondence; transportation, storage, and record; publications and labels; installation; at \$2,000 .....	8,000.00
One disbursing clerk* .....	1,200.00
One clerk of class 4 .....	1,800.00
Two clerks of class 3 .....	3,200.00
Three clerks of class 2 .....	4,200.00
Four clerks of class 1 .....	4,800.00
Four copyists, at \$900 .....	3,600.00
Four copyists, at \$720 .....	2,880.00
Six copyists, at \$600 .....	3,600.00
Three copyists, at \$480 .....	1,440.00
	36,920.00
<i>Preparators.</i>	
Photographer .....	2,000.00
Assistant photographer .....	1,000.00
Artist .....	1,320.00
Chief taxidermist .....	2,000.00
One taxidermist .....	1,500.00
Two taxidermists, at \$1,000 .....	2,000.00
Two taxidermists, at \$720 .....	1,440.00
One modeler .....	2,000.00
One modeler .....	1,200.00
One general preparator .....	1,200.00
One general preparator .....	900.00
Special service by contract .....	5,500.00
	22,060.00
<i>Buildings and labor.</i>	
One superintendent of buildings .....	1,620.00
Two assistant superintendents, at \$1,000 .....	2,000.00
Four watchmen, at \$780 .....	3,120.00
Twenty-four watchmen and door-keepers, at \$600 .....	14,400.00
Twelve laborers, at \$480 .....	5,760.00
Three attendants, at \$480 .....	1,440.00
Ten attendants and cleaners, at \$360 .....	3,600.00
Special service of laborers and cleaners to be paid by the hour .....	4,800.00
	36,740.00

\* This officer receives pay also from the Smithsonian Institution for similar services.

*Schedule of the classified service of the officers and employés, etc.—Continued.*

Designation.	Compensation.
<i>Mechanics (repairing buildings, cases, and objects in the collections).</i>	
Cabinet-maker, at \$3.50 per day.....	1,093.50
Two painters, at \$2.50 per day.....	1,565.00
One tinner, at \$2 per day.....	626.00
One stone-cutter and mason, at \$2 per day.....	626.00
Six skilled laborers, at \$2.50 per day.....	4,695.00
Six skilled laborers, at \$2 per day.....	3,756.00
Special service by contract.....	1,800.00
	14,163.50
<i>Furniture and fixtures.</i>	
Engineer of property.....	2,000.00
One copyist.....	900.00
One copyist.....	720.00
One copyist.....	600.00
One copyist.....	480.00
Six carpenters and cabinet-makers, at \$3.....	5,634.00
Three painters, at \$2.....	1,978.00
Two skilled laborers, at \$2.50.....	1,565.00
Two skilled laborers, at \$2.....	1,252.00
Three laborers, at \$1.50.....	1,408.50
Special service by contract.....	1,800.00
	18,337.50
<i>Heating, lighting, and electrical service.</i>	
Engineer.....	1,400.00
One assistant engineer.....	900.00
Six firemen, at \$600.....	3,600.00
Telephone clerk.....	720.00
	6,620.00
<i>Miscellaneous.</i>	
Agent.....	1,200.00
One draughtsman.....	1,200.00
Two draughtsmen, at \$600.....	1,200.00
Two messengers, at \$600.....	1,200.00
One messenger.....	540.00
Two messengers, at \$480.....	960.00
Two messengers, at \$360.....	720.00
Four messengers, at \$240.....	960.00
	7,980.00

The rapid growth of the Museum renders a more definite classification of its employés and in some instances larger salaries desirable, and it is hoped that this schedule, or one similar in its general features, will be ultimately accepted by Congress. There are, however, so many other considerations for which money is needed, as for instance the purchase of specimens, that it seems doubtful whether it is wise to bring this matter yet to a final issue.

## E.—REVIEW OF WORK IN THE SCIENTIFIC DEPARTMENTS.

*Department of Ethnology.*—Prof. O. T. Mason, Curator, mentions in his report nine collections, received during the year, as being of more than usual value. He has paid much attention during the year to the formation of several special exhibits, by which it is intended to bring before the eye of the visitor at a glance the entire collection from a definite locality, or to explain, within as limited a range as possible, a given art or industry of a particular tribe of Indians. This plan is in continuation of the method of installation of the Eskimo collection by Lieut. T. Dix Bolles in 1886. The subjects of fire making, heating, and lighting have been carefully studied by Mr. Walter Hough.

Special attention has also been paid to the study of transportation on the backs of men and women, to aboriginal hide dressing, to aboriginal cradles, and to the evolution of common tools, the knife, the hammer, the saw, etc. To interest the boys who visit the Museum a series of "jack-knives" has been arranged for public inspection, and the interest which such a case excites is shown by the gifts made constantly to the series.

In the latter part of the year the Curator commenced to collect for public reference a card catalogue of the resources of anthropology, to serve as a reference to the resources of the science, so that a special student, a lecturer, or a college professor can be put at once into communication with the chief sources of information.

Several exchanges of specimens have been effected during the year with other museums, notably the Peabody Museum at Cambridge, The Cincinnati Art Museum, and with Dr. Gosse, of Geneva, Switzerland, with the Royal Ethnological Museum in Berlin, and with Mr. Edward Lovett, of Croydon, England. The accessions of the year in this department were from sixty localities, and eight hundred and sixty specimens were received. The catalogue entries during the year were seven hundred and twenty-one in number.

*Section of Oriental Antiquities.*—Dr. Cyrus Adler, Assistant Curator, has devised an excellent plan for making copies of the smaller Assyro-Babylonian objects preserved in this country. These consist, for the most part, of seals, and are of much importance in the study of the history of Assyro-Babylonian religion and art. The primary object of the establishment of this section in the Museum was to collect copies of these seals and specimens of similar import. The history, archæology, languages, arts and religions of the peoples of Western Asia and Egypt are included in the scope of the section.

In common with several other departments in the Museum, this section was called upon to prepare an exhibit for the Cincinnati Exhibition. This work occupied several weeks, and a report upon the exhibit has been prepared by Dr. Adler and will be published in a future re-

port. Prof. Paul Haupt, Honorary Curator, has secured from the Royal Museum of Berlin and the British Museum several valuable casts of Assyrian and Egyptian objects. Labels have been prepared for the Assyro-Babylonian seals, and also for the Assyrian photographs from the British Museum, the Boufils photographs, and the Assyrian and Egyptian objects from the Royal Museum of Berlin. Dr. C. Johnson, jr., of the Johns Hopkins University, has made an examination of an interesting Persian astrolabe, and has presented a paper entitled "The Chaldean Astronomy."

It may not be improper in this connection, to call attention to the proposed edition of the "Life and Writings of Edward Hincks," by the Semitic Seminary of the Johns Hopkins University. In July the Smithsonian Institution consented to make the Institution a depository for papers and manuscripts sent to this country to further the prosecution of the work. Prof. F. Max Müller, of the University of Oxford, under date of September 27, forwarded manuscript letters of Dr. Hincks in his possession; and under date of October 20 he kindly offered to permanently deposit these letters in the Smithsonian Institution.

*Section of Transportation and Engineering.*—Work in this section has been seriously interrupted by the necessary absence of the Curator, Mr. J. E. Watkins, at the Cincinnati Exposition, where a collection of objects was exhibited illustrating the development of the various systems of transportation. The exhibit was arranged in seven series, and is fully described in a special paper prepared by Mr. Watkins for publication in a future report.

Among the important accessions during the year may be specially noticed the following objects: A Japanese kago (or palanquin), obtained through Mr. Hieromich Shugio, made of wood, beautifully lacquered and elaborately ornamented; and a model of a Japanese jinrikisha. Several interesting relics have been received, as, for instance, the bell of the locomotive "Rahway," cast in 1838, and a section of the first heavy iron rail rolled in America, presented to the Museum by the Baltimore and Ohio Railway Company. A number of valuable drawings, illustrating the development of marine steam engineering, have been added to the collection.

A re-arrangement of the exhibition series has been commenced, and is described in detail in the report of the Curator.

*Section of Graphic Arts.*—Mr. S. R. Koehler, Curator, states in his report that his special aim is "to represent art as an industry." This may perhaps be more intelligibly rendered by the statement that art productions of all kinds, considered primarily from their technical side, are included in the scope of this section. The Section of Graphic Arts was organized in January, 1887, and, no report having yet been submitted by the Curator, the one now published in Section II of this report relates to the work accomplished since that date. The contributors of material to this collection number one hundred and six, some of whom had been

invited to assist the Curator in the preparation of a special exhibit for the Cincinnati Exposition. The catalogue of this section now contains 2,894 entries, of which 294 represent objects which were purchased for the collection, chiefly old prints, and such other material as could not be obtained by gift. On March 31, 1888, there had been made 936 entries in the catalogue. At this time the first arrangement of the collection in the Museum had just been completed.

The thanks of the National Museum are due especially to Mr. Peter Moran, Messrs. L. Prang & Co., the Photo-Engraving Company, W. H. Whitcomb & Co., Mr. John Durand, and Mrs. Ednah D. Cheney for their generous co-operation and contributions.

Mr. Koehler has prepared a catalogue of the collection prepared for exhibition at the Cincinnati Exposition. A full list of the names of all who have contributed to the collection since this section was organized may be found in the report of the Curator.\*

*Department of Prehistoric Anthropology.*—The number of specimens added to the collection during the year has been 6,972, making a total number of 116,472 specimens in the collection. Mr. Thomas Wilson, Curator, states in his report that a great deal of his time has been consumed in examining and reporting upon objects sent for determination. The work of classifying and placing upon exhibition the specimens which were assigned to the exhibition series, has been rapidly pushed forward. A re-arrangement of the anthropological collection, which is still exhibited in the large hall on the second floor of the Smithsonian building, has been commenced, and Mr. Wilson's plan of re-arrangement is given in detail in his report.\*

Fourteen of the collections received during the year have been considered by Mr. Wilson sufficiently valuable to receive special notice. The contributions of the U. S. Fish Commission from Patagonia, Straits of Magellan, Lower California, and California, have been numerous and of great importance. These collections were made by the steamer *Albaross* during the voyage from Virginia to California in 1887-1888.

Mr. Wilson has continued his researches in regard to the existence of paleolithic implements in the United States. There have been 14,000 entries made in the catalogue of the department. A special exhibit, intended to indicate the existence and geographic distribution of prehistoric man, as shown by the implements and objects which he manufactured and used, was prepared by the Curator for the Cincinnati Exposition. This exhibit is described by Mr. Wilson in a paper which will be published in a future report.

*Section of Aboriginal Pottery.*—Among the more important additions to this section may be mentioned a collection of pottery from a mound near Lake Apopka, Florida, made by Dr. Featherstonehaugh, and a collection from a mound near Perdido Bay, Alabama, made by Mr. F. H. Parsons.

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\* See Section II.

Mr. William H. Holmes, Honorary Curator, regards the latter collection as one of the most important yet received from the Gulf coast. Mr. Holmes has found time to make a study of the pottery of the Potomac tide-water region during the year, and has prepared a paper upon this subject, which will appear in the "American Anthropologist."

The number of specimens added to the collection during the year is 1,100, necessitating 634 entries in the catalogue.

*The Forestry Collection.*—This section was established in April, 1889. Dr. B. E. Fernow, chief of the Forestry Division in the Department of Agriculture, has been appointed Honorary Curator. It has not been possible to accomplish very much during the three months of the existence of this section before the close of the fiscal year, but Dr. Fernow has submitted a report,\* in which he gives a brief outline of the scope of the collection which he hopes to make, and of the manner in which it may best be classified. A series of pictures illustrating the work of the French Forest Administration, and other objects, have already been placed on exhibition on a panel 14 by 12 feet. The Secretary of Agriculture has expressed his interest in the formation of this collection, and the Smithsonian Institution is greatly indebted to him for his co-operation in this branch of the Museum work.

*Department of Mammals.*—Special attention has been given in this department to providing better storage facilities for the study series of specimens, which has been largely increased by the collection of North American mammals deposited in the Museum by the Division of Economic Ornithology and Mammalogy in the Department of Agriculture. Groups of prairie-dogs and opossums have been mounted for exhibition and placed in new cases of special design.

The following contributors are mentioned in Mr. True's report as having presented material of especial value to the collection: Mr. William Wittfield, who presented two specimens of the Florida muskrat, *Neofiber alleni*; Mr. Loren W. Green, from whom was received a series of skins of the northern variety of *Tamias striatus*; Dr. R. W. Shufeldt, who presented a specimen of *Hesperomys truei*; Mr. James G. Swan, from whom was received a specimen of *Vespertilio longierus*. Dr. Arthur Edwin Brown, of the Zoological Society of Philadelphia, contributed a small deer, probably of the species *Cariacus gymnotus*. The skin of a full-grown moose was obtained by Col. Cecil Clay for the Museum. Several exotic mammals were also secured by gift and purchase. Capt. J. L. Gaskell, keeper of the life-saving station at Atlantic City, forwarded to the Museum a specimen of Sowerby's whale, *Mesoplodon bidens*. Mr. True states in his report that this is the second specimen ever taken in American waters, and is the first fresh specimen ever seen by American naturalists. A few South American mammals were obtained by the naturalists of the U. S. Fish Commission steamer *Albatross*. The most important were the skeleton of a

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\*See Section II.

porpoise, *Prodelphinus longirostris*, obtained between Panama and the Galapagos Islands, and several skins of the sea-lions inhabiting those islands. During the year there were added to the collection of skins 192 specimens, and to the alcoholic series 35 specimens. The catalogue of the department has been increased by 633 entries.

A series representing all the existing families of mammals was prepared for exhibition at the Cincinnati Exposition, and a descriptive guide to the collection has been prepared for publication.

*Department of Birds.*—Mr. Robert Ridgway, Curator of this department, states in his report that the re-arrangement, labeling, and general improvement of the exhibition series has been actively continued. Nine special exhibits of birds and eggs have been completed. A considerable portion of the time of the Curator has been devoted to committee work in connection with the revision of the check-list of the American Ornithologist's Union. Special investigations have also been made by the Curator, on the genera *Psittacula*, *Accipiter*, *Xiphocolaptes*, and *Scelerurus*. A large collection from Costa Rica has been studied, and also the extensive collection made by the naturalists of the Fish Commission steamer *Albatross* in Alaska and in various portions of South America. Dr. Leonhard Stejneger has continued his work on Japanese ornithology.

Dr. J. A. Allen, of New York City, Dr. P. L. Selater and Mr. Osbert Salvin, of London, England, Count von Berlepsch, of Münden, Germany, and several other active workers, have received material from the Museum to aid them in their studies of particular groups of American birds.

In March Dr. Stejneger severed his relations with this department, having been appointed Curator of the Department of Reptiles and Batrachians.

The accessions of the year number 1,490 specimens, of which 996 have been placed in the reserve series, 147 assigned to the duplicate series, while 347 specimens have been added to the exhibition collection. There are now 6,714 specimens on exhibition. Mr. Ridgway has made special mention in his report of 47 of the more important accessions received during the year.

*Section of Birds' Eggs.*—Capt. Charles E. Bendire, U. S. A., Hon. Curator, has continued the classification and arrangement of the new material, and has made considerable progress in re-labeling the reserve series of eggs in accordance with the revised check-list of the American Ornithologist's Union. He has also arranged a series of foreign eggs, of which there are now 4,913 specimens. Six collections of more than usual value have been received during the year. There are now more than 50,000 specimens in the collection. In the catalogue book 118 entries have been made.

*Department of Reptiles and Batrachians.*—Dr. H. C. Yarrow, U. S. A., who for several years has been in charge of this department,



having resigned, Dr. Leonhard Stejneger was in March appointed Curator of the department. He has commenced making a complete examination of the entire collection, and reports that at the close of the fiscal year he was still at work on the reserve series of North American species. The cataloguing of the new material and of specimens previously received but not catalogued, has been continued. The most important accession during the year was the collection made by the naturalists of the U. S. Fish Commission Steamer *Albatross*. It contains three hundred and nineteen specimens, which have been sent to Prof. E. D. Cope, of Philadelphia, for special report. Four other accessions are mentioned in the Curator's report as of especial interest.

The types of eight species have been identified and re-labeled. During the year Professor Cope has finished his work on the North American Batrachians, published as Bulletin 34 of the U. S. National Museum, and has commenced a study of North American snakes. Dr. G. Baur, of Yale College, has had for study a number of Chelonians, and some of the results of his studies are referred to in the Bibliography.\*

Dr. Stejneger reports that the condition of the collection is good, but that the re-numbering and re-labeling of specimens is constantly found to be necessary. During the year 741 specimens have been added to the collection, and 784 entries made in the catalogue. The excess of the latter over the former is accounted for by the fact that some of the material received before this fiscal year had not been catalogued.

The Curator has been unable to devote much time to scientific study of the collection during the few months he has been in charge. What little he has been able to do has been in connection with an investigation of the status of the boiform snakes of North America, with special reference to individual variation.

*Department of Fishes.*—It has been necessary for Dr. Tarleton H. Bean, Honorary Curator of this department, to spend the greater part of the year on special work pertaining to the Fish Commission. Dr. Bean has recently taken charge of the editorial work of the Fish Commission, leaving very little time to be devoted to Museum matters. During his absence from the city Mr. Barton A. Bean, his assistant, was left in charge of the department. The entire collection of fishes has been overhauled and the jars supplied with fresh alcohol. In addition to the large and valuable collections received from the U. S. Fish Commission, several other important collections have been added to the collection. Ten of these are especially referred to in the report of the Curator.

During the last six months of the year Dr. Bean prepared and had published in various journals numerous papers upon the *Salmonida* and other species of fishes. A list of these papers is given in the Bibliography.\*

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\* See Section IV.

The number of specimens received during the year was about 6,000, and 1,476 catalogue entries have been made. There are now, according to Dr. Bean's report, about 30,000 specimens in the exhibition series, 60,000 specimens in the reserve series, and 25,000 duplicates. The Curator calls attention in his report to the inadequacy of the case and storage room provided for the collection, and states that it has on this account become necessary to arrange the jars containing recent additions upon the floor.

*Department of Mollusks.*—The labeling, determining, and registration of old and new material has occupied a large share of the time of Mr. William H. Dall, Honorary Curator, and his assistants. Seven cases, containing a part of the Lea collection of *Unionidae*, have been arranged for exhibition. Much progress has been made in cleaning and assorting the fossils. Considerable time has been devoted to the arrangement of the collection representing the fauna of the southeastern shores of the United States and adjacent waters. A check-list of this fauna is now being printed. The collection contains about fifteen thousand specimens. Dr. R. E. C. Stearns, Adjunct Curator, has devoted a portion of his time to the land and fresh water shells, especially of North America. He has also pushed forward the revision and labeling of old material. The Curator has supplied information of various kinds to forty-three correspondents, necessitating a large amount of labor and correspondence.

Mr. Dall has found time to finish his investigation of the Mollusca obtained by the United States steamer *Blake* under the supervision of Professor Agassiz in the Gulf of Mexico and the Caribbean Sea, and has continued work on the dredgings obtained by the U. S. Fish Commission in the same region, and also upon the collections obtained last year by the U. S. Fish Commission steamer *Albatross* during its voyage to California. He has also been occupied in a new systematic arrangement of the bivalve shells, and has studied the correlation of the tertiary fossils of the southeastern Atlantic coast with the recent fauna. Dr. Stearns has prepared for publication a paper on prehistoric shell money.

Next in importance to the accessions received from the Fish Commission during the year is a collection consisting of about five thousand specimens of shells from all parts of the world. This was presented by Messrs. F. B. and J. D. McGuire on behalf of the heirs of the late J. C. McGuire, of Washington. A collection containing about three hundred species was received from the Auckland Museum, New Zealand. Interesting series of specimens have been received from Messrs. E. W. Webster and J. J. White. Small though valuable collections have been presented by Mr. Henry Hemphill and Lieut. J. F. Moser, U. S. Navy. Large collections of fossil shells have been received from the U. S. Geological Survey, and of almost equal importance is the collection from the fossiliferous deposits of Florida, presented by Mr. Joseph

Willcox. The entries in the catalogues of this department during the year are 6,323 in number. About 13,000 specimens have been received, giving a total of 468,000 specimens in the entire collection.

*Department of Insects.*—More time than in any previous year has been devoted by Dr. C. V. Riley, Honorary Curator of this department, to the preparation of collections for exhibition. A special series, designed rather for educational use than for museum purposes, was prepared for the Cincinnati Exposition. The installation of a permanent exhibition series has been commenced in the southeast range. In April Mr. J. B. Smith, Assistant Curator, resigned his position to accept a chair in Rutgers College, New Brunswick. During the Curator's absence, from April to the close of the fiscal year, Mr. L. O. Howard, of the Department of Agriculture, took charge of the department, and the thanks of the Museum are due to him for his energetic administration of its affairs. Mr. Martin Linell has been appointed aid.

The work of naming specimens for collectors, the arrangement and selection of material to be sent to specialists for determination, the arrangement in permanent shape of the reserve series, and the preservation of the general collection, have received as much attention as opportunity would allow.

Several researches of a special character upon Museum material have been made during the year. These are nine in number, and are referred to in the report of the Curator.\*

Twenty collections of more than ordinary interest have been received. About 8,000 specimens have been added to the collections during the year, and 78 catalogue entries have been made. The entire collection now contains, as estimated, 603,000 specimens.

*Department of Marine Invertebrates.*—Mr. Richard Rathbun, Honorary Curator, has been unable to devote much of his time during the year to the work of this department, owing to the pressing duties which have been placed upon him in connection with the work of the U. S. Fish Commission. The exhibition hall of this department, in the west end of the Smithsonian building, has been repaired and repainted, and is now open to visitors. The principal accessions have, as usual, been obtained from the Fish Commission, although these have been far less numerous than in any previous year, since the Fish Commission has lately retained its collections of marine animals with a view to their being studied and reported upon before being transferred to the Museum. For this reason probably not more than three hundred specimens have been added to the collection during the year. Interesting collections have been received from Lieut. J. F. Moser, U. S. Navy; Mr. Henry Hemphill; Dr. Louis F. H. Birt, of the Nicaragua Canal Construction Company; Mr. Romyu Hitchcock, who presented a small collection of crustaceans and sponges from Japan, and from Mr. James G. Swan, of Port Townsend, Washington.

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\* See Section II.

A collection of marine specimens was prepared and transmitted to the Cincinnati Exposition. It consisted mainly of large specimens, and also contained examples of fish food and many microscopical preparations. Upon its return from Cincinnati the more interesting portions of the exhibit were placed in the exhibition hall.

Mr. Rathbun has found it impracticable to devote very much time to original research, but has given a limited amount of study to the Madreporarian corals, and particularly to those collected by the steamer *Albatross* in the Gulf of Mexico and on the voyage from Norfolk to San Francisco.

Prof. A. E. Verrill and Prof. S. I. Smith have continued their work upon the invertebrate collections of the Fish Commission. Prof. Edwin Linton is making a special study of internal parasites of fishes. Arrangements have been made with Prof. Walter Faxon to prepare a report upon the crayfishes added to the department since 1885, and Mr. J. Walter Fewkes has completed a paper on certain of the Medusæ obtained by the Fish Commission steamer *Albatross* in the region of the Gulf Stream. Several of the groups of marine invertebrates obtained by the *Albatross* during its voyage around South America have been assigned to specialists outside of Washington for study and report.

Nineteen sets of marine invertebrates have been distributed to schools and colleges during the year. Each set contained about one hundred and ten species, the greater part of which are preserved in alcohol.

Mr. Rathbun in his report briefly reviews the marine explorations of the steamers *Albatross* and *Fish Hawk*; and of the schooner *Grampus*.

The number of catalogue entries has been 3,214.

*Department of Comparative Anatomy.*—Mr. F. W. True, Acting Curator of this department, reports that his activities have been principally directed towards reducing the accumulations of osteological material. A large number of skulls and skeletons have been cleaned and made available for use. The skulls of about five hundred specimens of small animals, deposited by the Department of Agriculture, have also been prepared. Mr. F. A. Lucas, Assistant Curator, has been occupied in the arrangement of the collection of vertebrate fossils, and in mounting a cast of the skeleton of *Dinoceras*, received from the Yale College Museum. Mr. Lucas also had charge of the preparation for shipment of the collection of mammals for exhibition at the Cincinnati Exposition.

The preparation of a card catalogue of alcoholic birds has been commenced, and is well advanced, and a large amount of work has been done in classifying and caring for this valuable portion of the collection.

Some work has been done in the preparation of specimens of soft anatomy and of the invertebrate material. The preparation and arrangement of the vertebrate fossils have also received some attention.

The principal accessions during the year were of mammals and birds.

No attempt has yet been made to acquire invertebrate specimens for this department. The most important addition to the exhibition series of skeletons was an Atlantic Right whale, *Balæna biscayensis*. This was purchased from Prof. H. A. Ward, of Rochester, N. Y. A skeleton of Sowerby's whale, *Mesoplodon bidens*, was prepared from the specimen obtained from Capt. J. L. Gaskell, keeper of the life-saving station at Atlantic City. The U. S. Fish Commission furnished skins of dolphins, a skeleton of the Fork-tailed gull, *Crengus furcatus*, and a collection of birds and Elephant tortoises from the Galapagos Islands and the Straits of Magellan. An alcoholic collection of typical New Zealand birds was obtained from the Auckland Museum, and a similar collection of Australian birds was obtained from the Australian Museum at Sydney. In all 195 specimens have been added to the collection during the year. The number of catalogue entries during the same period has been 1,054. The excess of this number over the total number of specimens received is accounted for by the large amount of work accomplished upon accumulations of osteological material from past years.

*Department of Paleozoic Fossils.*—By far the larger portion of the accessions to this department has been obtained through the U. S. Geological Survey. Mr. C. D. Walcott, Honorary Curator, has contributed to the Museum collections, through his official connection with the Geological Survey, a large series of Lower Middle Cambrian fossils from Newfoundland. He reports that the Lower Cambrian genera and species have been worked over and named, and that a large quantity of new material has been added to the collection. From Newfoundland alone not less than 3,000 specimens have been transferred to the Museum during the year. Mr. Walcott in his report makes special mention of nine accessions. The material in the collection has been increased during the year by the addition of 6,477 specimens. The number of catalogue entries during the same period was 583.

*Department of Mesozoic Fossils.*—The official duties of Dr. C. A. White, Honorary Curator, in connection with the Geological Survey, has prevented him from devoting more than a small share of time to work upon the Museum collection. A great deal has, however, been accomplished, and the collection of Mesozoic Fossils is now in far better condition than it has ever been before. Numerous type specimens of species which have been published in various Government reports, have been installed and are now on exhibition in the south-east court. The principal accessions during the year have, as usual, been obtained through the U. S. Geological Survey. In addition, type specimens of twelve species of cretaceous fossils were transmitted to the Museum by President D. S. Jordan, of Indiana State University. From the Fish Commission has been received an interesting collection of cretaceous fossils from the Straits of Magellan. Altogether, 311 specimens have been added to the collection during the year, and 117 entries have been made in the catalogue.

*Department of Botany.*—Dr George Vasey, of the Department of Agriculture, has been appointed Honorary Curator of this department, and in that capacity has control of the collections both in the Department of Agriculture and in the National Museum. A brief statement of the early history of these collections, and of the resulting conditions which led to this combination of the two collections, is given on pp. 19 and 20. By this union of interests in the development of the National Herbarium, a great many good results will undoubtedly be effected.

There are already in the Department of Agriculture arranged on shelves, in wall cases, occupying altogether a wall space of about 85 running feet, not less than 120,000 sheets of botanical specimens. The general catalogue of the combined herbarium has not yet been made.

The Department of Agriculture has employed for a part of the year three agents to collect botanical specimens and information respecting the vegetation of little known regions. One of these agents has operated in western Texas, one in California (southern and lower), and one in Washington. From these agents we have received a large quantity of botanical specimens.

Among the additions to the herbarium received during the year through the Smithsonian Institution, have been a collection of plants from South America and Alaska, made by officers of the U. S. Fish Commission steamer *Albatross*. Several packages containing plants and pertified wood were collected by Lieut. Pond in Lower California and the adjacent islands. A valuable collection of four hundred species of Japanese plants has been received from the Tokyo Educational Museum. Five collections of duplicate specimens have been distributed to foreign herbaria. The number of specimens received during the year has been estimated at 459.

*Fossil plants.*—Prof. Lester F. Ward, Honorary Curator, has been able to devote but little time to the work of the department, owing to the pressure of his duties as paleontologist of the Geological Survey, but as far as his time permitted he has been engaged in the study of the fossil plants of the Laramie group. He is preparing a monograph of the flora of this group, and hopes to complete it before very long.

During the field season, between July and the latter part of October, Prof. F. H. Knowlton, Assistant Curator, visited the Yellowstone Park, where he made a collection of fossil plants and fossil woods which filled twenty-one boxes. After his return to Washington the boxes were opened, and the assortment of the collections was begun. Considerable time was spent in the study of this material, as well as upon the material obtained during the previous season from the same region.

Professor Lesquereux, of Columbus, Ohio, has completed the identification and elaboration of the large collection of fossil plants belonging to the National Museum, and collected by Capt. Charles E. Bendire in John Day Valley, Oregon. The material is very interesting, and contains many new species.

On account of the pressing nature of Professor Ward's duties in connection with the Geological Survey, he has not been able to prepare a report for this year, and this brief statement is therefore submitted in lieu of a formal report in Section II.

*Department of Minerals.*—The growth of the collection during the year has, through the energetic administration of its Curator, Prof. F. W. Clarke, been very satisfactory. The two most important accessions were received from the U. S. Geological Survey. These collections were made by Prof. S. F. Penfield and by Dr. W. F. Hillebrand, who visited Colorado and the adjacent States and Territories for the purpose of making mineralogical investigations and collections. A series of specimens of wood opal, collected by Dr. A. C. Peale in Montana, has also been contributed by the Geological Survey. Professor Clarke in his report\* makes mention of eleven accessions as of especial interest.

It is to be deeply regretted that Mr. Joseph Willecox has found it necessary to withdraw his collection of minerals from the Museum, where it had been deposited for more than four years. Mr. Willecox had offered to sell this collection to the Museum for an exceedingly modest sum, but this offer could not be entertained, the Museum having no fund for the purchase of specimens, and thus the Museum has sustained an irreparable loss.

A series of specimens, illustrating the gems and precious stones of North America, was prepared for exhibition at the Cincinnati Exposition.

During the year 5,794 specimens were added to the collection, and 631 entries were made in the catalogue.

*Department of Lithology and Physical Geology.*—There has been unusual activity in the work of this department during the year. The Curator, Mr. George P. Merrill, has visited certain localities in North Carolina, New Hampshire, New York, Vermont, Massachusetts, and Maine, for the purpose of collecting specimens. These expeditions have resulted very advantageously to the Museum. Among the new material received sixteen collections have been selected as worthy of special mention in the report of the curator.\*

One of the objects of the expeditions already alluded to was for the purpose of collecting material for distribution to educational establishments. It has been quite impossible to fill the numerous applications for lithological specimens from museums, colleges, and schools throughout the country. Mr. Merrill has succeeded in obtaining a very large quantity available for this purpose, and during the coming winter it is expected that a sufficient number of sets of specimens can be prepared to fill the applications now on file. From material on hand at the beginning of the year covered by this report, twenty-two sets of minerals were prepared and distributed. The determination of material sent for examination and report has occupied no inconsiderable portion of the

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\*See Section II.

Curator's time. During the year twenty-five "lots" of material have been forwarded for this purpose.

The collection of building and ornamental stones now fills thirteen door-screen cases, one wall case, two large pyramids, and the tops of three table cases. The collections of rocks and rock-forming minerals are now as extensive as can be taken care of in the limited space at the command of this department. These collections now comprise about two thousand specimens. The collections of dynamic and historical geology have received important additions during the year, but no attempt has yet been made to arrange them systematically. The total number of specimens received during the year has been 4,500, and 1,135 entries have been made in the catalogue.

*Department of Metallurgy and Economic Geology.*—The Curator, Mr. F. P. Dewey, has devoted his time chiefly to the preparation and arrangement of the exhibition material, which is now installed in the southwest court. During the year the Curator made a visit to Providence, B. I., for the purpose of examining a collection of petroleum specimens and related materials which had been prepared by Prof. S. F. Peckham in connection with his work for the Tenth Census. This collection numbers three hundred and sixty specimens, and illustrates very fully the occurrence of crude petroleum in this country. It is in the Museum, and will be placed upon exhibition as soon as practicable. Several valuable collections of ores have been added to the collection during the year, among which may be mentioned three series of foreign ores; one from the Australian Museum at Sidney, one from the Auckland Museum in New Zealand, and one forwarded by the Hon. Otto E. Reimer, United States consul at Santiago de Cuba.

During the year the Curator has made an examination of the production of pig-iron at the Muirkirk Furnace, near Washington, and nickel from Russel Springs, Kansas. This was undertaken at the request of the Hon. J. J. Ingalls.

The collection has been increased during the year by the addition of 664 specimens, and 413 catalogue entries have been made.

*Department of Living Animals.*—This department was organized in May, 1888, and Mr. William T. Hornaday, who has recently been appointed Superintendent of the National Zoological Park, retains charge of the collection. Owing to the limited space available for exhibiting these specimens, consisting of a wooden shed adjoining the Smithsonian building on the south, it has become necessary to decline several offers of valuable contributions to the collection. Mr. Hornaday has prepared, during the year, an exhaustive memoir relating to the discovery, life history, and extermination of the American Bison. Owing to the delay attending the printing of the Museum report, it was found possible to include this paper in the report for 1887, proof of which is now being received from the Printing Office. In order to emphasize the rapid extermination of this and several other animals indigenous to the United



States, a large collection of objects illustrating this subject was prepared for the Cincinnati Exposition. Amongst the animals which have become extinct were shown the buffalo, the Californian sea-elephant, and the West Indian seal. In the series of species which are likely to disappear very soon were the mountain sheep, mountain goat, elk, antelopes, moose, caribou, black-tail deer, beaver, otter, sea-otter, walrus, and grizzly bear.

Among the most important accessions received during the year were three specimens of the American elk, presented by the Hon. W. F. Cody; a young Gray wolf, presented by Mr. C. A. Dole, of Glendiva, Montana; a collection of living tortoises from the Galapagos Islands, collected by the U. S. Fish Commission steamer *Albatross*; and four Angora goats, received from Misses Grace and Maude Parsons. Of especial interest is a young Rocky Mountain sheep, *Ovis montana*, forwarded to the Museum by Mr. George Bird Grinnell, editor of "Forest and Stream."

Special cages have been constructed on the reservation south of the Smithsonian building for the grizzly bear, puma, and the eagles. A buffalo-yard has also been completed on the same reservation, and from it sections have been cut off to afford protection for the deer, mountain sheep, and other animals.

In addition to Mr. Hornaday's other duties he has retained the supervision of the taxidermic work of the Museum. There are now 491 specimens in the collection of living animals, represented by 341 entries on the catalogue of the department.

## F.—REVIEW OF THE ADMINISTRATIVE WORK.

### PROGRESS OF GENERAL AND INCIDENTAL WORK.

#### LIBRARY.

Mr. John Murdoch, librarian, has furnished the following statement of the operations of the library during the year:

The total number of publications added to the library during the year is 6,052 (648 volumes of more than 100 pages, 903 pamphlets, 4,343 parts of regular serials, and 158 charts). Of these, 441 volumes, 617 pamphlets, and 3,752 parts of serials were retained for the use of the Museum from the accessions of the Smithsonian Institution.

The remainder were obtained as usual by gift, exchange, and purchase.

The most important accession to the library during the year was the gift of the heirs of the late Dr. Isaac Lea, of Philadelphia, consisting of 137 volumes, 276 parts and 693 pamphlets, selected from his scientific

library, and comprising many works of the greatest value. Another important accession is a nearly complete series of the "Proceedings of the Zoological Society of London." This gift was received so late in the fiscal year that it has been impossible to enter and catalogue the books. When this can be done, most of them will be assigned to the sectional library of Mollusks.

Apart from the regular exchanges, the following donations to the library are also worthy of notice:

From Dr. Paul Haupt, Baltimore, 44 pamphlets on oriental subjects; from Prof. P. H. Carpenter, Eton College, England, 19 pamphlets, scientific papers by his distinguished father; from Mr. John Murdoch, Washington, 18 volumes, 2 pamphlets; from Prof. Alpheus Hyatt, Boston, 12 pamphlets.

During the year 7,583 books were borrowed from the library.

Ninety-four persons are now authorized under the regulations to draw from the Museum library, and of these seventy-five are also authorized to obtain books from the library of Congress through the Museum library. During the year 245 orders were sent to the library of Congress.

The method of keeping the records of loans and returns of books, referred to in a previous report, has been used throughout the year with complete satisfaction.

The card-catalogue by authors has been continued, and 1,442 titles have been added to it during the year.

Through the kindness of the librarian of Congress, an order was obtained for binding 300 volumes of the books belonging to the Smithsonian deposit in the Museum library. These books were therefore sent to the Government bindery on June 20, 1889.

The work of covering and arranging the large collection of pamphlets has been continued, whenever the pressure of routine work would allow.

No material change has been made in the force employed in the library since the last report.

#### SECTIONAL LIBRARIES.

The regular inspection of the sectional libraries by the librarian was begun May 22 and completed June 7. Since the last report, the name of the section of archæology has been changed to Prehistoric Anthropology, and a new sectional library, that of Oriental Archæology, in charge of Dr. Cyrus Adler, Assistant Curator of the Section of Oriental Antiquities, has been established. The Assistant Secretary has commenced the organization of his sectional library, that of Administration.

The following is the result of the inspection:

*Administration.*—(In process of organization.) Inspected May 28, Contained 30 volumes and 1 pamphlet.

*Birds.*—Inspected May 23. Contains 480 volumes, 22 pamphlets, and 203 parts of serials. These are mostly in good condition, although the large volumes are necessarily exposed to dust for want of suitable cases. At least two additional standard book-cases with locks are required in this department.

*Insects.*—Inspected June 7, 1889. Contains 296 volumes, 169 pamphlets, and 538 parts of serials in excellent order, and suitably protected.

*Editor, Smithsonian Institution.*—Inspected May 7, 1889. Contains 809 volumes, 34 pamphlets, and 619 parts of serials, all in good order.

*Ethnology.*—Inspected May 31, 1889. Contains 55 volumes, 16 pamphlets, 225 parts of serials and 1 chart, all in good order.

*Fishes.*—Inspected May 23, 1889. Contains 78 volumes, 6 pamphlets, and 24 parts of serials, all in good order and suitably protected.

*Lithology and Physical Geology.*—Inspected June 3, 1889. Contains 184 volumes, 175 pamphlets, and 162 parts of serials and 5 charts, in good order and suitably protected.

*Mammals.*—Inspected June 6, 1889. Contains 183 volumes and 276 pamphlets, in good order.

*Marine Invertebrates.*—Inspected May 22, 1889. Contains 76 volumes, 41 pamphlets and 183 charts, all in good order and suitably protected.

*Materia Medica.*—Inspected May 29, 1889. Contains 202 volumes, 4 pamphlets and 181 parts of serials, all in good order.

*Mesozoic Fossils.*—Inspected June 25, 1889. Contains 34 volumes, 11 pamphlets, and 3 charts of serials, in good order.

*Metallurgy and Economic Geology.*—Inspected June 4, 1889. Contains 276 volumes, 139 pamphlets, 177 parts of serials and 1 chart, in excellent order.

*Mineralogy.*—(a) Inspected June 7, 1889. Contains 157 volumes, 9 pamphlets, and 511 parts of serials, all in good order.

*Mineralogy.*—(b) Inspected June 3, 1889. Contains 61 volumes, 50 pamphlets, 3 parts of serials and 1 chart, all in good order.

*Mollusks and Cenozoic Fossils.*—Inspected May 24, 1889. Contains 66 volumes, 9 pamphlets and 46 parts of serials, all in good order.

*Oriental Archaeology.*—Inspected May 28, 1889. Contains 131 volumes, 66 pamphlets and 39 parts of serials, all in good order.

*Plants, recent and fossil.*—Inspected June 5, 1889. Contains 236 volumes, 224 pamphlets and 645 parts, in fair order.

*Prehistoric Anthropology.*—Inspected May 25, 1889. Contains 55 volumes, 13 pamphlets and 35 parts, in fair order, in addition to the Rau Memorial Library, which is still only partially catalogued.

*Textiles and Foods.*—The officer in charge of this department having returned to duty, the library is in process of reorganization. It was inspected June 7, 1889, and at that date contained 22 volumes and 11 pamphlets in good order.

## TRANSPORTATION, STORAGE, AND DISTRIBUTION OF DUPLICATES.

The total number of boxes, packages, barrels, tanks, etc., received during the year is 16,625, of which 2,182 contained specimens for the Museum, the remainder being distributed to the Smithsonian Institution and the other persons addressed.

The registrar, Mr. S. C. Brown, has continued to act as transportation clerk for the Smithsonian Institution, and this has entailed a considerable addition to the routine work of his office.

During the fiscal year 261 packages were entered upon the storage records, and 203 packages were removed from storage and turned over to the curators for study, and to aid in making up sets for distribution.

Forty-eight boxes of duplicate and reserve material have been sent to general storage, and 57 specimens were sent out in exchange.

During the month of May the general storage room was removed from the "Old Armory" building to the storage shed west of the Armory building, and the storage separated into three sections.

First. General storage, which is now confined to the large shed proper, and is used for the storage of Museum specimens only.

Second. The south track of what is known as the "car shed" has been set aside for the accommodation of specimens collected by the U. S. Geological Survey and Bureau of Ethnology. All such specimens are entered in the Museum storage record, but are kept by themselves for convenience in handling.

Third. A new shed, 88 by 18 feet, has been erected west of the old one. The south end of it, 10 by 18 feet, is reserved for the department of Lithology and Physical Geology, for the storage of its duplicate material; the remainder of the new shed (78 by 18 feet) has been assigned to the property division of the Museum, for the storage of cases, drawers, etc.

The total number of packages sent out during the year is 2,552, of which 1,302 contained Museum material, transmitted as gifts or loans, or in exchange.

The Museum has continued to lend photographs of exhibition cases to all who have made formal application, and to send sample trays and boxes and copies of labels to applicants.

The distribution of specimens for the year, from the several departments of the Museum, is shown in the appended table.

Department.	No. of specimens.
Ethnology.....	268
American prehistoric pottery.....	32
Prehistoric anthropology.....	833
Mammals.....	42
Birds.....	226
Birds' eggs.....	3
Reptiles.....	47
Fishes.....	39
Mollusks.....	369
Insects.....	197
Marine invertebrates.....	2,072
Invertebrate fossils.....	598
Fossil and recent plants.....	2,945
Minerals.....	2,370
Lithology and physical geology.....	804
Metallurgy.....	58
Photographs and drawings.....	79
Total number of specimens sent out.....	11,382

Duplicate sets\* of marine objects have been sent out, as in the past, in response to applications received from museums and educational institutions.

The distribution for the year was as follows:

	Specimens.
To domestic institutions.....	5,511
To foreign institutions.....	5,871
Total.....	11,382

This number added to the total number of specimens sent out from 1854 to June 30, 1888, which was 564,090, gives the grand total of 575,472 specimens distributed by the Smithsonian Institution up to June 30, 1889.

In addition to the regular sets of duplicates five special collections were also sent out.

Thirty-four applications for duplicate specimens other than marine invertebrates have been received during the year and entered upon the register. A majority of these have been favorably acted upon.

Mr. George P. Merrill has collected a large amount of material, which, together with duplicate specimens in the Museum, will be cut up and made into sets for distribution to educational establishments. Prof. F. W. Clarke has for a similar purpose made large collections of minerals.

Eight hundred specimens of minerals were sent out to over twenty establishments, and sixteen sets of duplicates were distributed to colleges and schools.

\* Series IV. Each set in this series contains 108 species. Six universities, five colleges, five schools, and one society have each received a set during the year. A list of these is given in the report of the Curator of marine invertebrates. (Section II.)

It is probable that during the next fiscal year sets of bird-skins will also be prepared for distribution.

From the duplicate collections of the department of botany, distributions have been made to the Imperial Academy of Sciences, St. Petersburg, Russia; the Herbarium of the Jardin des Plantes, Paris, France; the Herbarium of the British Museum, London, England; the Royal Herbarium, Kew, England; and the Botanic Garden, Natal, South Africa.

Several special requests for material for study have been complied with. Among these were unmounted prints of photographs of the Charnay casts for the Bureau of Ethnology; pieces of the vertebral columns of *Chimara* and *Gymnotus* for Prof. John A. Ryder; ethnological material for the Cincinnati Museum Association; cast of jade adze for Mr. Kunz; a loan of bird skeletons for Dr. J. L. Wortman, of the Army Medical Museum, to aid in the preparation of a monograph upon the anatomy of the fish hawk; two enlarged negatives and prints of the Red River Dam views for Commodore J. G. Walker, chief of the bureau of navigation, Navy Department; a collection of fishes for the College of the City of New York; skull of Flat Head Indian for Prof. E. de Bois Reymond, director of the Physiological Institute in Berlin.\*

#### EXCHANGES.

The Museum has, as in past years, continued the exchange of duplicate specimens with museums, scientific establishments, and individuals at home and abroad. The domestic exchanges are indicated in the accession list (section v).

A classified statement of foreign exchanges is here presented.

*Ethnology.*—The Royal Ethnological Museum at Berlin, Germany, sent a series of casts of Egyptian and Assyrian antiquities. A list of these casts is given in the List of Accessions. The Museum of St. Germain, Paris, France, sent a collection of bronze implements (molds) in exchange for spears, plummets, and sinkers. The Musée d'Ethnologie of Geneva, Switzerland, sent in exchange, through Dr. H. J. Gosse, director, one hundred and twenty-seven specimens of pottery, bronzes, etc., from various localities in the Swiss lakes. Thirty-two ethnological specimens were sent to the Musée d'Ethnologie, Geneva, Switzerland, in exchange for a fine collection of pottery, bronzes, etc. Exchanges have been continued with Mr. Edward Lovett, of Croydon, England.

*Prehistoric anthropology.*—A collection of archæological specimens was sent to L. Guesde, Guadeloupe, in exchange for a collection of birds. A collection of thirty-four archæological specimens was sent to William Ranson, Fairfield, Hitelin, England; and similar material was received

\* This skull was obtained by Dr. John S. Billings, curator of the Army Medical Museum, from the banks of Willamette River, Oregon, near its junction with the Clackamas.

in exchange. A collection of sixty-nine archaeological specimens was sent to Signor Joseph Belucci, Perugia, Umbria, Italy. A collection of one hundred and four archaeological specimens was sent to Prof. Henry H. Giglioli, Museum of Zoology, Florence, Italy. A collection of fifteen archaeological specimens was sent to Louis Guesde, Pointe à Pitre, Guadeloupe, West Indies, and a collection of similar material was received in exchange. A collection of forty-nine archaeological specimens was sent to Gustav Marty, Toulouse, France.

*Mammals.*—Skeletons of bisons and skulls of sea-lion and fur-seal were sent to Prof. T. F. Cheeseman, curator of the Auckland Museum, New Zealand, in exchange for a collection of birds, shells, minerals, rocks, and ores. A sea-lion and two fur-seals were sent to the Zoological Museum of the Royal University, Christiania, Norway, in part exchange for a Killer whale (*Orea gladiator*). The British Museum sent three casts of *Meiolaus* from Lord Howe Island, England, in exchange for a skull of an American bison.

*Birds.*—From the Royal Zoological Museum, Florence, Italy, was received, in exchange, a collection of birds, fishes, reptiles, and mammals. Twenty-four bird-skins were received from Herr von Tschusi zu Schmidhoffen, of Salzburg, Austria.

*Fishes.*—An exchange of fishes has been made with the Australian Museum at Sydney. The Zoological Museum of Copenhagen, Denmark, sent sixty-seven specimens of fishes from northern seas. The Otago University Museum, Dunedin, New Zealand, sent in exchange a valuable collection of New Zealand fishes, containing forty-one species.

*Mollusks.*—A valuable collection of North European mussels and algæ was received from Dr. Rasch and C. Jensen, of Copenhagen, Denmark. A large collection of shells, three hundred and seventy-one specimens, was sent to the Albany Museum, Grahamstown, South Africa, in exchange.

*Insects.*—Specimens of Heteroptera were received from A. L. Montandon, Bucharest, Roumania.

*Botany.*—An exceedingly valuable collection of New Zealand woods was received from the Canterbury Museum, New Zealand, through F. W. Hutton, acting director. The Museum sent to Dr. Rasch, Copenhagen, and C. Jensen two hundred and fifty herbarium specimens. A collection of ferns from the Hawaiian Islands was received from G. W. Lichtenthaler, Bloomington, Ill., in exchange for ferns from Costa Rica. A collection of plants has been sent to the Imperial Academy of Sciences, St. Petersburg, Russia, and similar material has been received in exchange. A collection of plants has been sent to the Herbarium of the Jardin des Plantes, Paris, France. A collection of plants has been sent to the Herbarium of the British Museum, London, England. A collection of plants has been sent to the Royal Botanical Garden, Kew, England, and similar material has been received in exchange. A collection of plants has been sent to the Botanic Garden, Natal, South Africa.

*Minerals.*—The Imperial Roy. Natural History Museum, Vienna, sent in exchange three meteorites, through Dr. Aristides Brezina. Sixty-two specimens of miscellaneous minerals and forty-three specimens of miscellaneous rocks were sent to B. Sturtz, Bonn, Prussia, in exchange for rocks.

*Geology.*—An interesting and valuable series of meteorites and eruptive rocks of Brazil, comprising two hundred and sixty-nine specimens, was received from Prof. O. A. Derby, of Rio de Janeiro, in exchange for a series of rocks. A collection comprising about one hundred and eighty specimens of modern and antique marbles from Europe and Africa was received in exchange from the Museum of Natural History at Paris. A series consisting of one hundred and sixteen dressed specimens of building and ornamental stones and one hundred and two specimens of rocks, ores, and minerals, was sent to Dr. Aristides Brezina of the Imperial Royal Museum at Vienna, Austria, and a collection of one hundred and seventeen specimens of building stones was received in exchange. A series of one hundred and one specimens of building stones, many of them cut and polished, and a collection of eruptive and sedimentary rocks was sent to M. Meunier, of the Museum of Natural History, Paris, France. The National Museum of Brazil, at Rio de Janeiro, through Prof. O. A. Derby, sent a collection of Brazilian rocks and a meteorite, and one hundred and thirty-one specimens of American rocks sent in exchange. Rocks and minerals were sent to R. N. Worth, Plymouth, England, in exchange for serpentine rock. Five specimens of American rocks were sent to M. A. Lacroix, Paris, France.

A collection comprising sixty-four specimens of typical rocks and ores was sent to Rev. G. E. Post, Beirut, Syria.

#### PUBLICATIONS.

The publications of the National Museum consist of four series :

(1) The ANNUAL REPORT, submitted to the Secretary of the Smithsonian Institution, and by him transmitted to Congress as a part of the report of the Board of Regents of the Smithsonian Institution.

From 1850 to 1866 and from 1881 to 1883 the series was printed as an appendix to the report of the Secretary.

From 1867 to 1873 no report was published, except in passing reference in the Secretary's report on the Administrative work of the year.

From 1874 to 1877 the report of the Assistant Secretary on the Museum was quoted in the Secretary's report, and from 1878 to 1880 it was incorporated in the report of the Secretary.

Since 1884 the report on the Museum has been printed as a separate volume, constituting Part II of the report of the Smithsonian Institution, and the fifth volume of this series—that for 1887-'88—is now being printed. In the appendix of this report are printed each year certain



papers illustrative of the work of the Museum and descriptive of its collections, selected with reference to their general interests, as being suited for publication in a large edition and calculated to excite interest in the work of the Museum.

An edition of 7,000 copies of the Smithsonian Report, Part I and Part II, is placed in the hands of the Smithsonian Institution for distribution.

(2) The BULLETIN OF THE NATIONAL MUSEUM.—This series was begun in 1875, and thirty-seven numbers have been printed, Bulletin 38 being now in the hands of the printer.\* The aggregate number of pages is 9,939+616 plate pages, in all 10,555 pages, or  $659\frac{1}{6}$  signatures. The number, character, and size of these bulletins is given in the accompanying table.

*Bulletins of the National Museum.†*

No.	Title.	Author.
1	Check-list of North American Batrachia and Reptilia .....	Edward D. Cope.
2	Contributions to the Natural History of Kerguelen Island.....	J. H. Kidder.
3	Contributions to the Natural History of Kerguelen Island.....	Do.
4	Birds of Southwestern Mexico.....	George N. Lawrence.
5	Catalogue of the Fishes of the Bermudas.....	G. Brown Goode.
6	Classification of the Collection to Illustrate the Animal Resources of the United States.	Do.
7	Contributions to the Natural History of the Hawaiian and Fanning Islands and Lower California.	Thos. H. Streets.
8	Index to the Names which have been Applied to the Subdivisions of the class Brachiopoda excluding the Rudistes previous to the year 1877.	W. H. Dall.
9	Contributions to North American Ichthyology .....	David S. Jordan.
10	do .....	Do.
11	Bibliography of the Fishes of the Pacific Coast of the United States.	Theodore Gill.
12	Contributions to North American Ichthyology.....	David S. Jordan.
13	The Flora of St. Croix and the Virgin Island.....	H. F. A. Eggers.
14	Catalogue of the Collection to Illustrate the Animal Resources and the Fisheries of the United States.	G. Brown Goode.
15	Contributions to the Natural History of Arctic America.....	Ludwig Kunlien.
16	Contributions to North American Ichthyology .....	David S. Jordan. Charles H. Gilbert.
17	On the Zoological Position of Texas.....	Edward D. Cope.
18	Exhibit of the Fisheries and Fish Culture of the United States of America, at the International Fischerei Ausstellung, Berlin, April 20, 1880.	G. Brown Goode.
19	Nomenclator Zoologicus.....	Samuel H. Scudder.
20	The Writings of American Zoologists .....	G. Brown Goode.*
21	Nomenclature of North American Birds.....	Robert Ridgway.
22	Guide to the Flora of Washington and Vicinity.....	Lester F. Ward.
23	Bibliography of the Publications of Isaac Lea, LL. D.....	N. P. Scudder.

\* At the close of the fiscal year covered by this report, Bulletin 33 was the latest issued. Nos. 34, 35, 36, and 37 have since been published, and it seems proper to include them in this general statement of Museum publications.

† It may be found desirable to condense the series of bulletins into volumes, each containing three or four papers. Three such volumes have already been published.

*Bulletins of the National Museum.—Continued.*

No.	Title.	Author.
24	Check-list of North American Reptilia and Batrachia.....	H. C. Yarrow.
25	Contributions to the Natural History of the Bermudas .....	{J. Matthew Jones. {G. Brown Goode.
26	Avifanna Columbiana.....	Coues and Prentiss.
27	Catalogue of the Collections Exhibited by the United States of America at the Great International Fisheries Exhibition, London, 1883.	
28	A Manual of American Land Shells .....	W. G. Binney.
29	Results of Ornithological Explorations in the Commander Islands and Kamtschatka.	Leonhard Stejneger.
30	Bibliography of publications Relating to the Collection of Fossil Invertebrates in the U. S. National Museum.	John B. Marcon.
31	The North American species of Syrphidae .....	S. W. Williston.
32	Catalogue of Batrachians and Reptiles of Central America and Mexico.	E. D. Cope.
33	Catalogue of Minerals Alphabetically Arranged.....	Thomas Egleston.
34	Batrachia of North America .....	E. D. Cope.
35	Catalogue of the Described Transformations of North American Lepidoptera.	Henry Edwards.
36	A Review of the Species of Delphinidae .....	F. W. True.
37	Marine Mollusks of the Southeast coast of the United States .....	W. H. Dall.

The following bulletins were not published in the year covered by this report, but, having been issued before the report was in type, it is deemed desirable to include them in this statement:

Bulletin 34. The Batrachia of North America. By E. D. Cope.

Bulletin 35. Bibliographical Catalogue of the Described Transformations of North American Lepidoptera. By Henry Edwards.

Bulletin 36. Contributions to the Natural History of the Cetaceans; a review of the Family Delphinidae. By Frederick W. True.

Bulletin 37. A Preliminary Catalogue of the Shell-bearing Mollusks and Brachiopods of the Southeastern Coast of the United States. By William Healey Dall.

The composition of these thirty-seven bulletins\* is given in the following tables:

\* The following arrangement is suggested for the convenience of those who may wish to bind the bulletins into volumes:

Bulletin Nos.		Bulletin Nos.	
Vol. I.....	1 to 10	Vol. VII.....	27
Vol. II.....	11 to 15	Vol. VIII.....	28, 29
Vol. III.....	16	Vol. IX.....	30, 31, 32
Vol. IV.....	17, 18, 19	Vol. X.....	33, 34
Vol. V.....	20, 21, 22, 23	Vol. XI.....	35, 36, 37
Vol. VI.....	24, 25, 26		

*Composition of bulletins of the National Museum, Nos. 1 to 37.*

No. of Bulletin.	Date.	Ante.	Text.	Inter.	Post.	Plate pages.	Total.	Cuts.	Plates.	Maps.
1.....	1875	(4)	104				108			
2.....	1875	(10)	51		(1)		62			
3.....	1876	(2)	122				121			
4.....	1876		56				56			
5.....	1876	(2)	82				84			
6.....	1876	(12)	126				138			
7.....	1877		172				172			
8.....	1877		88				88			
9.....	1877		53		(1)		54			
10.....	1877	(4)	120			(90)	214		45	
11.....	1882	(4)	73		(1)		78			
12.....	1878		237		(1)		238			
13.....	1879	(6)	133		(1)		140			
14.....	1879	(16)	351		(1)		368			
15.....	1879		179		(1)		180			
16.....	1882	(56)	1,018				1,074			
17.....	1880	(4)	51		(1)		56			
18.....	1880	(16)	263		(1)		280			
19.....	1882	(22)	340				362			
20.....	1883	(18)	377		(1)	(4)	400		1	
21.....	1881		94				94			
22.....	1881		264		(2)		266			1
23.....	1885	(60)	278		(2)		340		1	
24.....	1882	(6)	249		(1)		256			
25.....	1884	(25)	353		(1)	(24)	403		12	
26.....	1883		133		(1)	(4)	138	100	2	4
27.....	1884	(54)	1,279	*(2)	(1)		1,336			
28.....	1885		528				528	515		
29.....	1885		382			(32)	414	7	8	1
30.....	1885		333		(1)		334			
31.....	1886	(32)	287		(1)	(48)	368		12	
32.....	1887		98				98			
33.....	1889		198	†(4)			202			
34.....	1889		525		(1)	(172)	698	120	86	
35.....	1889		147		(1)		148			
36.....	1889		191		(1)	(94)	286		47	
37.....	1889		221		(1)	(148)	370		74	
Total.....							10,555			

\* Table of statistics.

† Abbreviations and errata.

Year.	No. of bulletins.	Pages.	Year.	No. of bulletins.	Pages.
1875...	2 bulletins (1, 21).....	170	1883 ..	2 bulletins (20, 26).....	538
1876....	4 bulletins (3, 4, 5, 6).....	402	1884... 2 bulletins (25, 27).....	1,739	
1877... 4 bulletins (7, 8, 9, 10).....	528	1885... 4 bulletins (23, 28, 29, 30).....	1,616		
1878... 1 bulletin (12).....	238	1886... 1 bulletin (31).....	368		
1879... 3 bulletins (13, 14, 15).....	688	1887... 1 bulletin (32).....	98		
1880... 2 bulletins (17, 18).....	366	1889... 5 bulletins (33, 34, 35, 36, 37)....	1,704		
1881... 2 bulletins (21, 22).....	360	Total.....	10,555		
1882... 4 bulletins (11, 16, 19, 24).....	1,770				

(3) The PROCEEDINGS OF THE NATIONAL MUSEUM.—This series was begun in 1878 and the twelfth annual volume—that for 1889—is now being printed.\*

In the first eleven volumes were printed seven hundred and sixty scientific papers in addition to thirty-four administrative papers printed from time to time in the appendix.

The total of pages in the first ten volumes, excluding the appendices, is 6,112, 410 of plates, or 6,522 pages, constituting 406 $\frac{3}{4}$  signatures.

Of Vol. XI there have been printed 671 pages of text with 60 plates. The total number of pages when the volume is complete will be about 725+120 plate pages.

In the table here introduced is shown the number of pages, text figures and plates, in Vols. I to X of the "Proceedings."

No.	Date.	Ante.	Text.	Inter.	Post.	Total.	Plate pages.	Grand total.	Text figures.	Appendix to volumes.		
										Plates.	Figures	Pages.
I	1879	4	520	.....	.....	524	16	540	5	8	.....	.....
II	1880	4	499	4	1	508	20	528	.....	7	.....	.....
III	1881	6	589	.....	1	596	4	600	.....	2	.....	.....
IV	1882	8	534	.....	.....	542	4	546	13	1	.....	146
V	1883	12	703	.....	1	716	24	740	52	12	.....	.....
VI	1884	8	461	.....	1	470	56	526	6	14	4	68
VII	1885	8	591	.....	1	600	8	608	.....	2	.....	70
VIII	1886	8	679	.....	1	688	100	788	.....	25	12	50
IX	1887	8	714	.....	.....	722	100	822	5	25	.....	.....
X	1888	8	737	.....	1	746	78	824	11	39	.....	34
		74	6,027	4	7	6,112	410	6,522	92	135	16	368

This series was established for the purpose of securing prompt publication of discoveries in the Museum, and in order to secure this, the printing has been done signature by signature as fast as matter was prepared, and a certain number of signatures have always been distributed, as soon as published, to scientific institutions and specialists, these being dated by stamp in the Smithsonian Institution. The number of signatures of each volume thus distributed has been in the neighborhood of two hundred.

This method of publication has seemed to be to some extent wasteful, and it is thought that good results may be secured by distributing a certain number of the advance copies in the form of authors' extras; consequently, in making the requisition for the printing of Vol. XII the following assignment was made: Out of an edition of 1,200 copies, 100 to be delivered in signatures as fast as printed, and 300 in extras or reprints, in paper covers, of which 50 are to be given to the authors and the remainder distributed to specialists, in the various departments to

\* Vol. XI and twelve papers of Vol. XII have been published between the end of the fiscal and the calendar year.

which the papers relate, who are not otherwise provided with the publication. The 800 remaining volumes to be bound and distributed in this form.

In special instances, where a given paper in the "Proceedings" is believed to be of great general interest and to require a larger distribution, it has been customary to print from one hundred to one thousand extra copies.

(4) The MUSEUM CIRCULARS: Of these, forty-one have now been printed. The first thirty three numbers of the circulars were included as appendices to the Proceedings. Circulars 34 and 35 were printed in the report of the Museum. Circular 36 was issued only as a separate and what should be No. 37 was printed without a number in Vol. x of the "Proceedings" (page 701). It is believed that hereafter it will be more satisfactory to reprint them in the annual report of the Museum, since they are more of an administrative than of a scientific character. The object of printing them as appendices to the "Proceedings" was to provide for the expense out of the fund for printing the "Proceedings," but since the printing fund is now more directly under the control of the Museum, it is quite practicable to print such editions as may be needed of these administrative papers, and instead of having them electrotyped, they can be reset when the time comes for printing them in the report—a method which is rather less expensive to the Museum than the former one.

Following is a list of circulars 1 to 41, with titles and number of pages in each :

No.	Title.	No. of pages.
1	Plan of organization and regulations .....	58
2	Circular addressed to friends of the Museum .....	2
3	Circular in reference to petroleum collections .....	2
4	Circular concerning the department of insects .....	1
5	Establishment and officers .....	2
6	Classification and arrangement of the materia medica collections .....	2
7	A classification of the forms in which drugs and medicines appear and are administered .....	7
8	Memoranda for collectors of drugs for the materia medica section of the National Museum .....	2
9	Circular in reference to the building-stone collection .....	6
10	Two letters on the work of the National Museum .....	10
11	A professional classification of the food collections .....	22
12	Classification of the collection to illustrate the art of taxidermy .....	2
13	Outline of a scheme of Museum classification .....	4
14	Circular requesting material for the library .....	3
15	The organization and objects of the National Museum .....	4
16	Plans for the installation of collections .....	2
17	Contributions and their acknowledgements .....	1
18	List of publications of the United States National Museum .....	12
19	Classification of the materia medica collection of the U. S. National Museum and catalogue of specimens .....	15
20	Request for specimens of drugs and information concerning them .....	1
21	Circular relative to contributions of aboriginal antiquities to the U. S. National Museum .....	5
22	Brief directions for removing and preserving the skins of mammals .....	7

No.	Title.	No. of pages.
23	Instructions for taking paper molds of inscriptions in stone, wood, bronze, etc. ....	5
24	Plan of a collection to illustrate the textile industries of the United States, to be exhibited at the World's Industrial and Cotton Centennial Exposition, 1884-'85 at New Orleans .....	16
25	Preliminary plan for a collection of the building and ornamental stones and rocks of the United States, to be exhibited at the World's Industrial and Cotton Centennial Exposition, 1884-'85 at New Orleans. ....	2
26	Plan for a collection of the gems and precious stones of the United States, to be exhibited at the Cincinnati Industrial Exposition and the World's Industrial and Cotton Centennial Exposition, 1884-'85 at New Orleans. ....	2
27	Directions for collecting and preserving and transporting tortricids and other small moths .....	3
28	Directions for mound exploration .....	3
29	Provisional plan for a collection of mammals to be exhibited at the World's Industrial and Cotton Centennial Exposition of 1884-'85 at New Orleans .....	27
30	A list of birds the eggs of which are wanted to complete the series in the National Museum, with instructions for collecting eggs .....	4
31	Plan to illustrate the mineral resources of the United States and their utilization, at the World's Industrial and Cotton Centennial Exposition of 1884-'85 at New Orleans. ....	2
32	Classification of the materia medica collection of the U. S. National Museum, and catalogue of specimens. ....	39
33	Notes on the preparation of skeletons. ....	3
34	Circular for the guidance of persons desiring to make exchanges of birds or birds' eggs with the National Museum .....	1
35	*Concerning the lending of type specimens. ....	1
36	Circular concerning Department of Antiquities, American Aboriginal Stone Relics. ....	6
†37	‡Catalogue of the contributions of the section of graphic arts to the Ohio Valley Centennial Exposition, Cincinnati, 1888 .....	31
38	Contributions of the Department of Transportation and Engineering to the Ohio Valley Centennial Exhibition, 1888. ....	18
39	The contribution of the section of Oriental Antiquities to the Ohio Valley Centennial Exhibition .....	7
40	Description of exhibit made by the Department of Prehistoric Anthropology in the National Museum at the Ohio Valley Central States Exposition in Cincinnati, Ohio, 1888. ....	33
41	Guide to a collection illustrating the families of mammals exhibited in the Ohio Valley Centennial Exhibition in 1888 by the U. S. National Museum .....	26

\* See Museum report 1886, p. 25.

† This and the following circulars were erroneously numbered.

‡ See "Proceedings," Vol. x, p. 701.

#### HISTORY OF THE MUSEUM PUBLICATION FUND.

The publication of the Proceedings and the Bulletin was at first paid for from the printing fund of the Interior Department, with which the Museum was at that time in close relations in respect to financial matters. Subsequently it was paid for from a fund for printing the labels of the Museum, estimates for which were annually submitted by the Secretary of the Interior at the request of the Secretary of the Institution. The amount asked for was usually \$10,000, but in 1882-'83 the estimate was for \$20,000, which sum, however, was not allowed. Although in the book of estimates, the Museum appears as asking a

certain sum for printing, no reference was made in making the appropriation for the Museum, but the money was given in the gross sum allotted to the Interior Department as a Printing Fund.

In 1888, however, a separate appropriation was made for the first time in these words: "For the National Museum, for printing labels and blanks and for the Bulletins and Annual Volumes of the Proceedings of the Museum, \$10,000."

In 1889 the appropriation for the fiscal year 1890 was made in the same words, but was not included as heretofore in the appropriations for the Department of the Interior.

The edition of the earlier volumes of the Proceedings and Bulletins was usually only 1,000, of which a portion was distributed by the Department of the Interior and a portion by the Museum, the number received being sometimes as many as 500, and sometimes as few as 250.\* The edition placed at the disposal of the Museum being so small and withal so uncertain as to number, the distribution was always of necessity informal, and no effort was made, except in the case of the signatures of Proceedings, already referred to, to provide for supplying copies to a regular list of institutions and specialists. A considerable number were used up in the work of the Museum, and the others were sent to correspondents of the Museum in exchange for publications, for specimens, and incidentally to such institutions as might apply for copies, as well as to individuals, especially students who made it evident that they were in a position to make good use of the books.

In some cases, as, for instance, that of the catalogues of the Animal Products and Fisheries Collection at the Centennial Exhibition in 1876 (Bulletin 14); the catalogue of the Exhibit of the Fisheries and Fish Culture of the United States of America at the International Fishery Exhibition at Berlin in 1880 (Bulletin 18), and the catalogue of the collection exhibited by the United States at the International Fisheries Exhibition at London in 1883 (Bulletin 27), the entire edition, and indeed an extra large number of copies also, were entirely absorbed in special uses in connection with the exhibition work. In other instances, such as Coues and Prentiss's "Catalogue of the Birds of the District of Columbia" (Bulletin 26) and Ward's "Guide to the Flora of Washington and Vicinity" (Bulletin 22) the books were largely distributed to supply a local demand.

It was, in fact, not intended that formal publication of these documents should be made from the advance edition to which I have referred.

Formal publication was undertaken by the Smithsonian Institution, it being the intention that, the first cost of composition and electrotyping having been provided for by the special Congressional appropriation, the Smithsonian Institution should avail itself of the electrotype-plates

\* The records show that of Bulletin 32, 250 copies were received; of Bulletin 29, 244; of Bulletin 25, 390; of Bulletins 27 and 30, 450.

and use them in making up certain volumes of the Miscellaneous Collections. The papers published in the "Proceedings" and "Bulletin" of the Museum were of precisely the same character which since 1862 had made up the great majority of the most important papers in the Miscellaneous Collections. The Institution then undertook to print an edition of 1,200 copies in the form of volumes of the Miscellaneous Collections, and to distribute them to the principal libraries of the world. This was at the time regarded as advantageous, since the cost of composition and electrotyping was always at least two-thirds of the cost of an edition of 1,200, and in addition to this the miscellaneous distribution, for which the Institution in the case of similar publications printed at its own expense had been accustomed to provide, was now already provided for out of the preliminary issue of several hundred copies paid for from the Museum fund.

The practice was in effect from 1878 to 1883, and five volumes of the Miscellaneous Collections were made up entirely of the "Proceedings" and "Bulletin" of the Museum, as is shown in the accompanying table.

Miscellaneous collections.	Date.	Contents.
Vol. XIII .....	1878	Bulletins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
Vol. XIX .....	1880	Proceedings Vols. 1, and 2.
Vol. XXII .....	1882	Proceedings Vols. 3 and 4.
Vol. XXIII .....	1882	Bulletins 11, 12, 13, 14.
Vol. XXIV .....	1883	Bulletin 16.

In this manner the first four volumes of the "Proceedings" and the first sixteen numbers of the "Bulletin" were published, constituting in each instance about one-third of the entire series up to the present date.

Since 1883 no publication of the "Bulletin" has been made, and none has been made in the case of the "Proceedings" since 1882.

There remain unpublished, then, eleven volumes of the "Proceedings" and twenty-one numbers of the "Bulletin," in all sufficient to make ten thick volumes of the Miscellaneous Collections. Possibly, by condensation and omissions the number might be reduced to nine volumes.

If the Institution were to undertake to print the edition of 1,000, now customary in the case of the Miscellaneous Collections, the cost would be not less than \$9,000.

The same amount expended by the Institution in printing fresh matter would probably not produce one and a half volumes, or at most two volumes, of Miscellaneous Collections.

As a matter of fact, however, the publication of the edition of 1,000 copies by the Smithsonian Institution would not really meet the necessities of the case, since it would leave unsupplied a very large number of libraries quite as deserving as those already on the list.

In view of all these facts, it seems not desirable that the Institution should undertake hereafter the publication of the Museum "Bulletin" and "Proceedings," since it is evident that these will increase in bulk



from year to year, and that the demand upon the Institution would very soon become too burdensome.

The desired result could be attained by obtaining from Congress an increase in the appropriation for the Museum printing. It would then be practicable to publish an edition of 2,000 copies in addition. A volume of Proceedings not exceeding 800 pages could then be printed each year, and an indefinite number of bulletins, not to exceed in the aggregate 1,600 pages, with the necessary illustrations.

It is estimated that an edition of at least 3,000 copies is needed in order to place these publications in the hands of those libraries which ought to receive them.

Two tables are appended, one giving a list by States of the institutions to which it would seem proper that distribution should first be made, and another, giving a schedule of the number required to supply not only the institutions in the United States, but also scientific societies and specialists at home and abroad.

	State library.	State university.	State agricultural college and experimental station.	State historical societies.	State academies of science.	Colleges.	Normal schools.	Depositories, not otherwise supplied.	Total.
Alabama.....	1	1	1	1		4	8	1	17
Arizona.....	1	0	0	0	0	0	1	0	2
Arkansas.....	1	0	1	0	0	4	1	2	9
California.....	1	1	(1)	0	1	11	3	5	22
Colorado.....	1	1	2	0	1	2		1	8
Connecticut.....	1	1	2	1	1	2	3	4	15
North Dakota.....	1	1		0	0	2	2	0	} 9
South Dakota.....	1	1	1	0	0			0	
Delaware.....	1	1	(1)	1	0			3	6
Florida.....	1	0	1	0	0	2	0	2	6
Georgia.....	1	1	4	1	0	6	0	8	21
Idaho.....	1								1
Illinois.....	1	1	1	1	1	27	4	12	48
Indiana.....	1	1	1	1	1	14	5	6	30
Indian Territory.....	1	0	0	0	0	0	0	0	1
Iowa.....	1	1	1	1	1	22	6	7	40
Kansas.....	1	1	1	1	1	12	2	5	24
Kentucky.....	1	1	(1)	1	1	14	0	3	21
Louisiana.....	1	2	(1)	1	1	9	3	2	19
Maine.....	1	0	1	1	0	3	6	2	14
Maryland.....	1	1	1	1	1	12	2	2	21
Massachusetts.....	1	1	1	1	1	9	10	11	35
Michigan.....	1	1	1	1	0	9	2	10	25
Minnesota.....	1	1	1	1	1	6	3	2	16
Mississippi.....	1	1	2	1	0	5	2	4	17
Missouri.....	1	1	2	1	1	16	6	9	37
Montana.....	1	1	0	0	0	0	0	0	2
Nebraska.....	1	1	(1)	1	0	6	2	3	14

	State library.	State university.	State agricultural college and experimental station.	State historical societies.	State academies of science.	Colleges.	Normal schools.	Depositories, not otherwise supplied.	Total.
Nevada .....	1	1	(1)	0	0	1	1	3	7
New Hampshire .....	1	1	(i)	1	0	0	2	3	8
New Jersey .....	1	1	1	1	0	3	4	7	18
New Mexico .....	1	1	0	1	0	2	0	0	5
New York .....	1	0	2	1	1	22	13	24	64
North Carolina .....	1	1	1	0	0	8	4	5	20
Ohio .....	1	1	(1)	1	0	35	12	11	61
Oregon .....	1	1	1	1	0	6	3	1	14
Pennsylvania .....	1	1	1	1	1	25	14	18	62
Rhode Island .....	1	1	1	1	0	0	1	3	8
South Carolina .....	1	1	1	1	0	7	4	5	20
Tennessee .....	1	1	(1)	1	0	18	5	5	31
Texas .....	1	1	(1)	0	0	7	4	7	20
Utah .....	1	1	0	0	0	0	0	0	2
Vermont .....	1	1	(1)	1	0	1	3	2	9
Virginia .....	1	1	3	1	0	7	2	3	18
Washington .....	1	1	0	1	0	2	0	0	5
West Virginia .....	1	1	(1)	1	0	2	6	2	13
Wisconsin .....	1	1	(1)	1	1	8	7	4	23
Wyoming .....	1	1	0	0	1	0	0	0	3
Total .....	48	42	36	33	17	345	157	207	891

*List by institutions and scientific societies.*

State and territorial libraries .....	48
State universities .....	42
Agricultural and mechanical college and agricultural experimental stations not otherwise supplied .....	36
State historical societies .....	33
State academies of science .....	17
Colleges, institutions for superior industry, all in the United States .....	360
State normal schools .....	157
Public depositories, not otherwise supplied .....	207
Schools of science, not otherwise supplied .....	20
Scientific societies, museums, etc., in the United States .....	125
Reserve, to supply public institutions not yet established .....	300
Important libraries in the United States, not otherwise supplied .....	100
Foreign government universities, scientific societies abroad, and specialists ...	500
Press and exchange government .....	150
Scientific specialists, exchanges for specimens, etc .....	600
For use of museums, special applications, contingencies, etc., and good of the Museum .....	305
Total .....	3,000

The issue of the enlarged edition would begin with Vol. XIII of the "Proceedings" and with Bulletin 40 or 41.

When the question of the publication of the back volumes is considered,

Vols. I to IV of the "Proceedings" and Bulletins 1 to 16 may be regarded as published; although not to the extent to which it would seem desirable in the way of supplying local institutions. Of the following there are in hand enough to make a very fair distribution, viz: "Proceedings" Vol. X and XI, and "Bulletins" Nos. 33 to 37. Of Vols. V to IX of "Proceedings" and of Bulletins 17 to 32, however, no systematic publication can be made without the printing of an additional number of copies.

There are, apparently, three ways in which the necessities of the case may be met.

(1) For the Smithsonian Institution to assume the publication in the Miscellaneous Collections of all the volumes of the Proceedings up to Vol. XII and of the Bulletins up to No. 40. Then to close the series and to begin the publication of two new series of "Proceedings" and "Bulletin" with a new set of numbers, in each instance to begin with No. 1.

(2) For the Smithsonian Institution to publish Vols. V to IX of the "Proceedings," and "Bulletins" 17 to 32, to make as judicious as possible a distribution of the subsequent volumes, and to begin with the year 1890 the publication of two series, as already suggested.

(3) To ask Congress in 1890 to appropriate a sum sufficient to complete the back sets of the "Proceedings" from Vol. I to XII, and in 1891 to make a similar request for the printing of back numbers of the "Bulletin;" in each case, if possible, securing an edition of 3,000 copies.

Appended to this part of the report are three lists of institutions, and foreign and domestic libraries to which it is desired to send the future publications of the Museum.

This is, of course, independent of the lists of special institutions and of specialists, who are provided with papers relating to their own peculiar lines of work, and also of institutions or individual specialists and correspondents of the Museum, with whom exchange is in progress, since such lists are constantly varying.

#### PUBLICATIONS DURING THE YEAR.

*Proceedings of the U. S. National Museum.*—Vol. X of this series, for 1887, was issued in December, 1888, and contains viii+771 pages and 39 plates. The first signature of the volume printed in this year was No. 32 (p. 497). In Vol. X are included seventy-eight papers\* by twenty-nine authors, ten of whom are officers of the Museum; namely,

*Subject.	Number of papers.	Subject.	Number of papers.
Birds .....	34	Fossil plants .....	1
Fishes .....	18	Recent plants .....	1
Marine invertebrates .....	9	Mineralogy .....	1
Insects .....	3	Osteology .....	1
Mammals .....	3	General natural history .....	1
Oology .....	2		
Mollusks .....	2	Total .....	78
Reptiles .....	2		

Messes, Bean, Beckham, Bendire, Knowlton, Lucas, Rathbun, Ridgway, J. B. Smith, Stejneger, and True. The other nineteen are Messrs. Bollmann, Cull, Cope, Eigenmann, Gilbert, Gill, Hay, Jordan, Kunz, Lawrence, Lesquereux, Lilljeborg, Linton, McNeill, Shufeldt, Townsend, Vasey, Zeddon, and Mrs. Elizabeth G. Hughes.

The Appendix contains (pp. 701-731) the "Catalogue of the Contributions of the Section of Graphic Arts to the Ohio Valley Centennial Exposition, Cincinnati, 1889," by S. K. Koehler, Curator of the Section of Graphic Arts in the National Museum. Nineteen signatures of Vol. XI, Proceedings of the National Museum for 1888, were received between November 8 and March 26, from the Government Printing Office.

*Papers descriptive of exhibits in the Cincinnati Exposition.*—Special papers, prepared by Mr. Frederick W. True, Mr. Thomas Wilson, Dr. Cyrus Adler, Mr. S. K. Koehler, and Mr. J. E. Watkins, and describing the exhibits of their departments in the Cincinnati Exposition, were received from the Public Printer in October.

*Bulletin of the U. S. National Museum.*—No. 33 of this series, entitled "Catalogue of Minerals and Synonyms Alphabetically Arranged for the Use of Students," by T. Egleston, Ph. D., was issued in April, 1889. The preparation of the catalogue was first undertaken with a view to using it in the arrangement of the mineral collections of the School of Mines of Columbia College, New York City, but the rapid growth of the collections impressed the author with the desirability of enlarging the scope of his labors so that it could be used generally in museum work. The catalogue contains 198 pages, the names of minerals being printed in double columns. This is the last bulletin of the Museum printed by the authority of the Secretary of the Interior Department. After the close of this fiscal year the Museum will, in accordance with the sanction of Congress, superintend the printing of its own publications and pay for them out of the special appropriation for that purpose.

Mr. A. Howard Clark has continued his duties as editor of Proceedings and Bulletin. In April, 1889, he was granted leave of absence, the President having commissioned him Assistant to the United States Commissioner General to the Paris Exposition, and Mr. R. E. Earl was appointed to act as editor in his absence.

The Public Printer has courteously expressed his interest in the matter of improving the appearance of the Museum publications, and has permitted the use of a better quality of paper and of new type.

The manuscript for the following bulletins of the National Museum has been transmitted to the Government Printing Office on the dates mentioned:

- Bulletin 31, "The Batrachia of North America," by E. D. Cope: April 11, 1887.  
 Bulletin 35, "Bibliographical Catalogue of the described Transformations of North American Lepidoptera," by Henry Edwards: February 25, 1889.  
 Bulletin 36, "A Review of the Family Delphacidae," by Frederick W. True: February 25, 1889.

Bulletin 37, "Marine Mollusks of the Southeast Coast of the United States," by Wm. H. Dall: March 23, 1889.

Bulletin 38, "Deep-Sea Fishes of the Atlantic Ocean," by G. Brown Goode and Tarleton H. Bean: October 18, 1888.

In Section IV of the report will be found a list of the publications of the Museum during the year, as also a bibliographical statement of papers by officers of the Museum and by others whose writings are based upon Museum material. The authors of these papers are eighty-nine in number, thirty-five of whom are connected with the Smithsonian Institution and the National Museum. The papers number four hundred and eighty, and are distributed under the following subjects:

Subjects.	By Museum officers.	By other investigators.	Total.
Textiles .....	1	0	1
Ethnology .....	14	6	20
Antiquities .....	2	0	2
Anthropology .....	3	0	3
Astronomy .....	3	0	3
Mammals .....	7	1	8
Birds .....	23	39	62
Birds' eggs .....	6	0	6
Reptiles and Batrachians .....	0	16	16
Fishes .....	23	20	43
Mollusks .....	7	3	10
Insects .....	138	15	153
Invertebrates .....	1	2	3
Fossils .....	9	1	10
Plants .....	24	2	26
Mineralogy .....	4	0	4
Lithology and Physical Geology .....	18	0	18
Exploration .....	1	0	1
Chemistry .....	4	0	4
Metallurgy .....	4	0	4
Assyriology .....	7	1	8
Transportation and engineering .....	4	0	4
Graphic arts .....	5	0	5
Agriculture .....	7	0	7
Forestry .....	3	0	3
History .....	1	0	1
Genealogy .....	1	0	1
Photography .....	4	0	4
Osteology .....	4	3	7
Biography .....	13	0	13
General .....	29	1	30
Total .....	370	110	480

## VISITORS.

During the year the total number of visitors to the Museum building has been 374,843, showing an increase of more than 125,000 over the total for last year, or a little more than one-half of the total number for last year, which was 249,665.

The total number of visitors to the Smithsonian building has been 149,130, an increase of nearly 47,000, or, in other words, of about two-fifths of the total number for last year, which was 102,863.

The monthly register, as kept by the door-keepers, is here recorded.

	National Museum building.	Smithsonian building.
1888.		
July .....	19,242	8,388
August .....	20,361	8,343
September .....	21,270	8,321
October .....	20,844	7,765
November.....	17,231	6,179
December.....	23,143	6,970
1889.		
January.....	23,287	7,916
February.....	24,485	8,223
March.....	126,750	64,553
April.....	27,925	7,848
May.....	26,314	7,159
June.....	23,991	7,429
Total.....	374,843	149,130
Approximate daily average .....	1,201*	478*

\* Counting 312 days to a year.

The Inauguration ceremonies in March brought large numbers of visitors to the Museum. On March 2 and 5 the Museum and Smithsonian buildings were visited by no less than 106,070 persons, the number on March 5, being 56,567. On these days the Museum building was kept open from 8 a. m. until 5.45 p. m.

*Table showing the number of visitors to the Museum and Smithsonian buildings since the opening of the former in 1881.*

Year.	Museum building.	Smithsonian building.	Total num- ber of visitors to both buildings.
1881.....	150,000	(?)	150,000
1882.....	167,445	152,744	320,189
1883.....	202,188	104,823	307,011
1884.....	195,322	91,130	286,452
1885 (January to June) .....	107,365	60,428	167,793
1885-'86 .....	174,225	88,960	263,185
1886-'87 .....	216,562	98,552	315,114
1887-'88 .....	249,665	102,863	352,528
1888-'89 .....	374,843	149,130	523,973
Total .....	1,837,615	848,630	2,686,245

## LECTURES AND MEETINGS OF SOCIETIES.

Following the custom of previous years, the use of the lecture hall has been granted by the Regents of the Smithsonian Institution for a series of lectures delivered under the joint auspices of the Anthropological, Biological, Chemical, National, Geographic, and Philosophical Societies of Washington.\* The programmes of the two parts of the course are as follows :

## PROGRAMME OF THE FIRST HALF OF THE COURSE.

*Saturday, March 9, 4.15 p. m.*—Prof. DANIEL C. GILMAN: Recent Aspects of University Education in this Country.

*Saturday, March 16, 4.15 p. m.*—Prof. W. O. ATWATER: The Composition of Our Bodies and Our Food.

*Saturday, March 23, 4.15 p. m.*—Mr. JOHN MURDOCH: Hunting and Fishing Among the Eskimos of Point Barrow.

*Saturday, March 30, 4.15 p. m.*—Mr. HENRY WETHERBEE HENSHAW: Who are the American Indians?

*Saturday, April 6, 4.15 p. m.*—Mr. G. K. GILBERT: The History of Niagara Falls.

## PROGRAMME OF THE SECOND HALF OF THE COURSE.

*Saturday, April 13, 4.15 p. m.*—Dr. WASHINGTON MATTHEWS: The Catlin Collection of Indian Paintings. (Illustrated by colored-lantern slides.)

*Saturday, April 20, 4.15 p. m.*—Prof. E. S. MORSE: Art Hand-Works of Japan.

*Saturday, April 27, 4.15 p. m.*—Mr. W. E. CURTIS: The United States of Colombia.

*Saturday, May 4, 4.15 p. m.*—Mr. EVERETT HAYDEN: Tropical Cyclones; with Special Reference to the Recent Hurricane at Samoa. (Illustrated by colored lantern-slides.)

*Saturday, May 11, 4.15 p. m.*—Prof. W. B. POWELL: First Steps in Education, Psychologically Considered.

The following table shows the number and dates of "Saturday lectures" delivered up to the close of the 1888-'89 course :

Year.	Date of first and last lecture.	No. of lectures.
1882.....	March 11, April 29 .....	8
1883.....	January 13, March 31 .....	12
1884.....	January 5, April 26.....	17
1885.....	February 7, May 2.....	12
1886.....	March 6, May 8.....	10
1887.....	March 12, May 7.....	12
1888.....	February 18, May 5.....	12
1889.....	March 9, May 11.....	10
Total.....	.....	93

On May 29, upon the request of the trustees of the Toner fund, Prof. Harrison Allen delivered a lecture in connection with the Toner course in the lecture hall of the Museum. The subject of the lecture was

\* The joint committee on lectures is as follows: Dr. Robert Fletcher, chairman; Marcns Baker, Henry Gannett, C. Hart Merriam, and H. W. Wiley.

“Clinical study of the skull undertaken in connection with the morbid conditions of the jaws and nasal chambers.”

During the year the following-named societies have, by permission, held meetings in the Museum lecture hall:

The National Dental Association met on July 24, 25, and 26. On the evening of September 20 was held one of the meetings of the Medical Congress. The American Ornithologists' Union held its sixth congress on November 13, 14, and 15. Meetings of the Department of Superintendence of the National Educational Association were held on March 6, 7, and 8. The National Academy of Science held its meetings on April 16, 17, and 18. The council of the American Geological Congress held business meetings on April 19. The American Historical Association held its fifth meeting in Washington during Christmas week; the evening sessions being held at the Columbian University, the morning sessions at the Museum.

#### STUDENTS.

Free access has as usual been given to students in the various branches of natural history. The Museum has also received valuable assistance from the volunteered co-operation of several specialists. In several instances special groups of objects have been studied and identified by naturalists, and in this way both they and the Museum have received benefit.

Ensign A. P. Niblack was assigned by the Secretary of the Navy to duty in the Smithsonian Institution on October 3, for the purpose of preparing a report on the Coast Indians of Alaska and Northern British Columbia. The report was made chiefly from notes taken by Ensign Niblack, in connection with the survey of Alaska, 1885-1887. This report was completed in time to include it as one of the special papers in the Museum report for last year.

Dr. C. Johnston, jr., of the Johns Hopkins University, has undertaken the study of a Persian Astrolabe, obtained by the Museum, and at the May meeting of the American Oriental Society presented a study, suggested by this instrument, entitled “The Chaldean Astronomy.”

Dr. C. Hart Merriam, of the Department of Agriculture, has made extensive studies of the arvicoline mice in the collection of mammals, as well as of other groups of North American mammals.

Prof. D. K. Shute, of the Medical Department of the Columbia University, was afforded facilities for study in the laboratory of the Department of Comparative Anatomy, and free access to the study series of specimens.

A portion of the collection of batrachians was lent to Prof. E. D. Cope to aid him in completing the illustrations for his work on the Batrachia of North America, since published as Bulletin 34 of the National Museum.

Dr. John A. Ryder, of the University of Pennsylvania, has been en-



gaged in a study of the vertebral column, and in this connection pieces of the vertebral column of *Chimaera* were lent to him. Dr. Ryder has, in a letter dated April 11, 1889, stated that every step can now be traced of the process by which the axial column of vertebrata has become what it is in the highest types.

Messrs. Frank Burns and Charles B. Greene have, by permission of the Director of the U. S. Geological Survey, rendered valuable assistance by their studies of the collections of Tertiary Mollusks.

The collection of *Materia Medica* has been studied by several students of medicine in the District of Columbia.

Dr. J. A. Allen, of New York, Dr. P. L. Selater, and Mr. Osbert Salvin, of London, Count von Berlepsch, of Münden, Germany, and several other active ornithologists, have received from the National Museum material to aid them in their studies of particular groups of American birds.

Dr. G. Baur, of Yale College, New Haven, Connecticut, has had for study a number of the Chelonians belonging to the Museum. The results of his studies have been published in Vol. XI of "Zoologischer Anzeiger," Vol. XXII of the "American Naturalist," Vol. III of "Annals and Magazine of Natural History," Vol. IX of "Biologisches Centralblatt," and Vol. XI of "Proceedings of the U. S. National Museum."

The undetermined Myriapoda in the collection of insects were sent to Mr. C. H. Bollmann, of Bloomington, Illinois, for study. The material in the genera *Oediomychis* and *Disonycha* were sent to Dr. George H. Horn, of Philadelphia, who is engaged in working up the genera of the *Halticidae*. Capt. T. L. Casey, of New York City, is studying the Staphylinid group of beetles, and the Museum material in certain genera was sent to him for examination.

Prof. A. E. Verrill and Prof. S. I. Smith have continued their work upon the collections made by the U. S. Fish Commission, and for the present stored at the Peabody Museum of Yale College. Prof. Edwin Linton is studying the internal parasites of fishes collected chiefly by himself at Wood's Holl. Prof. Walter Faxon, of the Museum of Comparative Zoology, Cambridge, Massachusetts, has promised to report upon the cray fishes received since 1885, and Mr. J. Walter Fewkes has completed a paper on some of the Medusæ collected by the Fish Commission steamer *Albatross* in the region of the Gulf Stream. Prof. Leslie A. Lee, chief naturalist of the Fish Commission steamer *Albatross*, has assorted the collections made by that vessel during the voyage around South America, and several groups of marine objects have been sent, for study and report, to different naturalists. These are referred to at greater length in the report\* of Mr. Richard Rathbun, curator of the Department of Marine Invertebrates. Dr. T. H. Bean, curator of Fishes, has rendered assistance to several students of ichthyology in this and other cities.

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\* See Section II.

Several students of taxidermy have received instructions from Mr. W. T. Hornaday.

#### PROPERTY, SUPPLIES, AND ACCOUNTS.

The following statement relating to cases and other furniture, and to the supplies, and accounts of the Museum, together with a list of employés for the fiscal year 1888-'89, has been prepared by Mr. W. V. Cox, chief clerk.

At the time of submitting the last report upon the finances of the Museum, the unexpended balance of the appropriation for preservation of collections, 1888, was \$239.11. Since then \$60 has been expended for specimens; \$9.38 for books; \$46.36 for travel, and \$122 for freight and cartage, leaving, May 1, 1890, an unexpended balance \$1.37.

The appropriations received by the Museum for the year ending June 30, 1889, are as follows: for preservation of collections, \$125,000; for furniture and fixtures, \$40,000; for heating and lighting, \$13,000.

#### PRESERVATION OF COLLECTIONS.

The following disbursements were made from the appropriation for preservation of collections for this year: \$108,650.65 was paid for salaries, or compensation; \$4,792.61 for supplies; \$1,638.92 for stationery; \$4,803.82 for specimens; \$1,573.68 for books, periodicals, etc.; \$643.05 for travel; \$2,759.04 for freight and cartage; making a total expenditure of \$124,861.77 to May 1, 1890, and leaving an unexpended balance of \$138.23 to meet outstanding liabilities.

The average amount paid on the monthly roll for this year is \$9,054.22; the smallest number of employés in any month is 130 for November, 1888; the largest, 167, in March, 1889, when extra service was required on account of the crowds of strangers visiting the Museum; the average number employed is 140.

#### FURNITURE AND FIXTURES.

From the appropriation for furniture and fixtures for the fiscal year ending June 30, 1889, the following amounts have been disbursed: \$17,664.30 has been paid for services; for exhibition and storage cases, with designs and drawings for the same, cabinets and storage bases, book-cases, unit tables and boxes, \$8,460.34; for fire-proof safe for disbursing clerk, \$412.12; frames, stands, double folding-screens, and miscellaneous wood-work, \$2,155.67; drawers, trays, and boxes, \$1,518.33; glass, \$989.19; metal work (iron, tin, brass, etc.) \$1,652.58; office furniture and chairs for halls, \$549.55; cages for living animals, \$160.80; glass jars and containers for specimens, apparatus, etc., \$695.41; cloth, plush, etc. (linings for cases), \$167.65; altering and re-enforcing cases, \$45; lumber, \$2,153.67; tools, hardware, and appliances, \$1,517.67; paints, oils, varnish, brushes, etc., \$865.86; slate, brick, stone, and plaster, \$543.61; rubber goods, \$421.88; traveling expenses, \$21.47, making a total of expenditures to May 1, 1890, of \$39,995.10, and leaving a balance of \$4.90 to meet bills yet outstanding.

The average amount paid this year on the monthly roll for furniture and fixtures is \$1,472.02. The greatest number of employés in any one month is 33; the smallest, 20; the average, 27. The highest salary is \$150, paid to the Engineer of Property; the lowest pay on this roll, to a cleaner of glass, is \$30; the average being \$54.18.

#### STANDARD CASES AND OTHER MUSEUM FURNITURE.

Among the various items of standard museum furniture there are none, perhaps, that fill the purpose for which they were designed more satisfactorily than the unit-tables, storage cases and drawers for the storage of specimens.

The standard round columns, which support forty-eight wing-frames, are of great utility where space is limited, since they admit of the display of a large superficial area (480 square feet) of drawings and other illustrations upon 35 square feet of floor space.

These facts seem to be recognized, as we have frequent requests from persons interested in museum administration in this and other countries for drawings of these styles of cases. To comply with such requests, cyanotypes and specifications showing the details of construction have been prepared by Mr. J. E. Watkins, the engineer of property, for transmission to applicants.

The following is a detailed list of cases, bases, frames, stands, apparatus, general appliances, fittings, etc., made or furnished during the year by persons outside the Museum:

Designs and drawings for cases .....	\$235.00
10 mahogany double Liverpool cases.....	2,360.00
20 mahogany unit-tables .....	2,500.00
10 mahogany dwarf unit-tables .....	1,200.00
1 addition to wall-case, E. S. Range .....	335.00
1 pair mahogany bases for Liverpool cases .....	170.00
1 mahogany Kensington case, Gray pattern .....	82.24
1 mahogany shade for Liverpool case .....	54.50
2 insect cabinets, twenty drawers each .....	250.00
12 pine card catalogue easels.....	234.00
5 pine standard book-cases .....	112.50
150 mahogany ease-heading frames .....	75.00
25 mahogany double-folding screens .....	68.75
2 mahogany quarter unit-tables .....	84.00
36 pine double unit-boxes .....	81.00
2 tin storage cases (for small mammals) .....	72.50
1 pine storage case (for drawings) .....	49.85
Re-enforcing and altering unit-table and slide-screen cases.....	45.00
1 mahogany case for Japanese Kago .....	228.75
1 mahogany case for elephant .....	107.00
1 mahogany case for opossum group.....	95.00
1 mahogany case for prairie-dog group.....	80.00
1 mahogany case for cave-bear skeleton .....	76.00
1 mahogany case for horn-bill group .....	53.00
1 frame for metal-covered case .....	45.00
1 fire-proof safe for disbursing clerk .....	412.12

2 cages for living animals .....	\$160. 80
Frames, stands, miscellaneous wood-work .....	1, 966. 92
Drawers, trays, boxes .....	1, 518. 33
Apparatus and photographic instruments .....	615. 21
Glass jars and vials .....	80. 20
Office furniture .....	395. 05
Chairs (for halls) .....	154. 50
Tools, hardware, and appliances .....	1, 517. 67
Lumber .....	2, 153. 67
Glass .....	989. 19
Paints, oils, varnish, and brushes .....	865. 86
Metal-work (iron, brass, tin, etc) .....	1, 652. 58
Slate, brick, stone, and plaster .....	543. 61
Cloth, plush, etc. (linings for cases) .....	167. 65
Rubber goods .....	421. 88
Traveling expenses .....	21. 47

A detailed list is here given of cases, furniture, etc., which have been made or remodeled in the Museum work-shops during the year ending June 30, 1889:

11 mahogany pier cases (remodeled).	43 bases.
5 mahogany unit cases (remodeled).	4 pedestals.
1 mahogany alcove case (remodeled).	2 shields.
1 mahogany wall case (remodeled).	48 mahogany frames.
1 mahogany wall case (extended).	24 mahogany label frames.
6 mahogany slide-screen cases (remodeled).	20 pine frames.
2 mahogany cases (repaired).	3 oak frames.
2 large oak cases for domestic fowls (re- modeled).	1 ash frame.
1 pine wall case (remodeled and extended).	1 oak counter, with drawers and railing.
3 pine cases (remodeled).	2 large, double storm-doors.
1 pair of storm doors (remodeled).	13 index boxes.
5 pedestals (remodeled).	13 panels (to go between columns).
1 walnut corner book-case.	8 screens.
2 oak book-cases.	4 stands.
1 pine book-case.	2 diaphragms.
1 oak case, with desk.	1 sample unit-drawer.
1 cherry glazed case.	1 shelf stack.
1 sample card-catalogue case.	2 heavy pine tubs for trees and plants.
7 pine storage cases.	5 cages for living animals.
3 pine wall cases.	1 pen for deer.
1 half unit-table, with drawers.	1, 000 blocks, beveled.
1 pine sample case for new style drawer slides.	1 table for circular saw.
11 mahogany table-tops for bent-wood legs.	35 copper tanks.
	20 tin insect-boxes.

During the first half of the year ending June 30, 1889, the time of the Museum carpenters was occupied to a considerable extent in making much needed and important changes in different parts of the building, whereby the number of rooms which could be used for office work was increased, and the space available for study series of specimens, storage of books, documents, etc., largely extended.

Partitions were built in the third floor, northwest pavilion, and extra ceilings were put in; in the southeast pavilion a ceiling with flooring

above was built, thus giving an additional room for the accommodation of the Entomological Department. Much new shelving was put up in the different departments, the stationery room was re-arranged, new files and book-cases were built for the Department of the Library, and a large number of cases, bases, frames, pedestals, etc., was built and remodeled.

In various places repairs have been found necessary in the flooring of the Museum, on account of the dry rot, which is becoming so extensive as to be a serious detriment. The bases of the cases standing directly upon the floor have also been found to be so much injured by the prevailing dry rot as to make it necessary to raise them upon blocks, pending the time when the bottoms of the cases can be repaired and strengthened, and, when practicable each article permanently raised upon casters. In order to prevent so far as possible any accumulation of dampness, which might cause this decay, the trenches below the building have been thoroughly cleaned, and have received several coats of whitewash, but the fact that the floors throughout the building were laid in the damp concrete renders this precaution of little avail. It has, however, been taken every year since the Museum has been occupied.

#### HEATING AND LIGHTING.

The appropriation for heating and lighting for the fiscal year ending June 30, 1889, was \$13,000.

The services of telephone clerk, engineer and firemen for this year amount to \$5,435; \$4,188.43 has been spent for coal and wood; \$1,188.37 for gas; \$625.24 for electric work; \$800.16 for telephones; \$120 for rental of call boxes; \$638.81 for heating repairs; making a total of \$12,996.01, which leaves, May 1, 1890, an unexpended balance of \$3.99.

The average amount paid this year on the monthly roll for heating and lighting is \$453. The greatest number of employés in any month is 9; the smallest, 6; the average, 8. The highest salary is \$120, paid to the engineer; the salaries of telephone clerk and firemen being uniformly \$50; the average salary is \$59.08.

The number of telephone calls made during the year is 31,377.

#### ELECTRICAL SERVICE.

A change, which proves satisfactory, has been made in the electrical service, by substituting for the clocks formerly used others which are run by the Gardiner system, and which, being connected with the U. S. Naval Observatory, are automatically regulated each day at noon.

An important improvement in the engine-room has been the repairing of the boiler, many of the tubes of which had become defective by long use. New ones were obtained, and put into position by the regular firemen, who, being practical mechanics, were able to accomplish these repairs at a saving of a considerable expense to the Museum.

## LIST OF MUSEUM EMPLOYÉS.

The following is a list of the employés of the U. S. National Museum, June 30, 1889, classified under the appropriation from which paid :

## EMPLOYÉS PAID FROM "PRESERVATION OF COLLECTIONS" APPROPRIATION.

Name.	Occupation.	Name.	Occupation.
Adler, Cyrus.....	Assistant curator.	Harris, J. T.....	Laborer.
Anderson, M. D.....	Laborer.	Harris, H. E.....	Do.
Ashley, W. M.....	Watchman.	Hawley, E. H.....	Preparator.
Ashford, E. W.....	Copyist.	Hendley, J. W.....	Modeler.
Bannister, W. F.....	Laborer.	Hess, A. V.....	Cleaner.
Bean, B. A.....	Aid.	Hill, R.....	Laborer.
Beard, N. C.....	Attendant.	Hitchcock, R.....	Curator.
Becker, E. J.....	Type-writer.	Holmead, C. H.....	Watchman.
Berres, Joseph.....	Skilled laborer.	Horan, Henry.....	Superintendent.
Bond, J. H.....	Laborer.	Horan, J. H.....	Watchman.
Bond, S. H.....	Messenger.	Hornaday, W. T.....	Chief taxidermist.
Brelsford, W. H.....	Watchman.	Hough, Walter.....	Aid.
Brockett, Paul.....	Messenger.	Irvine, A. C.....	Messenger.
Brown, J. H.....	Watchman.	James, C. H.....	Clerk.
Brown, S. C.....	Registrar.	Jony, P. L.....	Aid.
Brown, A. H.....	Preparator.	Kalb, C. S.....	Preparator.
Buckner, Benjamin..	Laborer.	Karr, W. W.....	Disbursing clerk.
Burger, W. H.....	Draughtsman.	Kenyon, C. P.....	Skilled laborer.
Burnside, H. W.....	Clerk.	Kimball, W. H.....	Clerk.
Cabill, John.....	Laborer.	Koehler, S. R.....	Curator.
Calvert, R. A.....	Watchman.	Latham, S. E.....	Copyist.
Chandlee, W. H.....	Draughtsman.	Laws, John.....	Laborer.
Chase, William.....	Laborer.	Linell, M. L.....	Aid.
Clark, A. Howard....	Curator.	Lucas, F. A.....	Assistant curator.
Cook, N. S.....	Laborer.	Luscombe, C. R.....	Skilled laborer.
Cooper, W. B.....	Skilled laborer.	Lyles, Isaac.....	Laborer.
Cornell, May.....	Copyist.	Malone, F. E.....	Attendant.
Cox, W. V.....	Chief clerk.	Marbury, E. M.....	Copyist.
Coyle, A.....	Cleaner.	Marron, Thomas....	Do.
De Ronceray, M. E....	Copyist.	Marshall, George....	Preparator.
Dewey, F. P.....	Curator.	Marshall, Henry....	Taxidermist.
Diggs, C. W.....	Messenger.	Mason, O. T.....	Curator.
Diggs, M. S.....	Copyist.	Merrill, G. P.....	Do.
Dorsey, James.....	Laborer.	Merrimon, W. B.....	Copyist.
Dunne, Peter.....	Watchman.	Montis, E. C.....	Do.
Durand, John.....	Agent.	Moore, G. C.....	Messenger.
Earll, R. E.....	Acting curator.	Neale, G. C.....	Laborer.
Ford, Patrick.....	Laborer.	Nelligar, T. S.....	Watchman.
Forney, A. H.....	Preparator.	Newhall, W. H.....	Clerk.
Gallaher, K. A.....	Copyist.	Noah, J. M.....	Do.
Gallaher, L. B.....	Clerk.	Palmer, Joseph.....	Modeler.
Gant, James.....	Watchman.	Palmer, William....	Preparator.
Gatton, J. F.....	Laborer.	Peck, F. H.....	Watchman.
Geare, R. I.....	Executive clerk.	Perkins, H. S.....	Copyist.
Goode, G. Brown....	Assistant Secretary.	Phillips, B. L.....	Laborer.
Graham, R. D.....	Skilled laborer.	Piper, M. A.....	Attendant.
Gurley, R. R.....	Aid.	Pollock, M. B.....	Watchman.
Hargrove, J. O.....	Messenger.	Posey, Kate.....	Cleaner.

## EMPLOYÉES PAID FROM "PRESERVATION OF COLLECTIONS" APPROPRIATION—Cont'd.

Name.	Occupation.	Name.	Occupation.
Proctor, J. C. ....	Preparator.	Stimpson, W. G. ....	Aid.
Queen, F. D. ....	Watchman.	Sullivan, Roger ....	Laborer.
Rathbun, M. J. ....	Copyist.	Sweeny, T. W. ....	Preparator.
Redman, G. F. ....	Laborer.	Tabler, L. D. ....	Type-writer.
Rembert, Esau. ....	Do.	True, F. W. ....	Curator.
Rheem, E. S. ....	Copyist.	Turnbull, T. R. ....	Clerk.
Rhees, W. J. ....	Clerk.	Twine, David. ....	Messenger.
Ridgway, R. ....	Curator.	Upham, E. P. ....	Clerk.
Roan, Oliver. ....	Laborer.	Wassem, Harriet. ....	Attendant.
Rosenbush, C. ....	Copyist.	Weeden, W. C. ....	Watchman.
Scollich, J. W. ....	Taxidermist.	White, George. ....	Laborer.
Seudder, N. P. ....	Clerk.	Whiting, E. E. ....	Clerk.
Sessford, J. S. ....	Do.	Wilson, J. F. ....	Copyist.
Shindler, A. Z. ....	Artist.	Woltz, G. W. ....	Watchman.
Skinner, A. ....	Watchman.	Wood, N. R. ....	Assistant taxidermist.
Smillie, T. W. ....	Photographer.	Wright, Clifford. ....	Messenger.
Stejneger, L. ....	Acting curator.	Wynne, I. M. ....	Copyist.
Stewart, C. A. ....	Assistant superintendent.	Yeates, W. S. ....	Assistant curator.
Stimpson, H. B. ....	Copyist.	Yeatman, M. A. ....	Copyist.

## EMPLOYÉES PAID FROM "FURNITURE AND FIXTURES" APPROPRIATION.

Atkinson, S. S. ....	Copyist.	Offutt, F. I. ....	Painter.
Branson, J. W. ....	Laborer.	Rabbitt, Charles. ....	Do.
Burger, Peter. ....	Skilled laborer.	Reed, R. L. ....	Carpenter.
Busching, H. ....	Cabinet-maker.	Ryan, R. W. ....	Do.
Coleman, J. M. ....	Carpenter.	Saunders, Robert. ....	Laborer.
Desmond, J. J. ....	Laborer.	Scott, Charles. ....	Do.
Field, G. W. ....	Carpenter.	Thorn, A. B. ....	Do.
Goldsmith, J. S. ....	Clerk.	Thomas, W. R. ....	Do.
Gregory, M. J. ....	Cleaner.	Taylor, H. C. ....	Do.
Haney, W. H. ....	Carpenter.	Todd, E. R. ....	Clerk.
Holton, John. ....	Laborer.	Wallingsford, W. W. ....	Painter.
Hoover, J. E. ....	Skilled laborer.	Watkins, J. E. ....	Engineer of property.
McClain, G. C. ....	Laborer.	Woltz, C. A. D. ....	Painter.

## EMPLOYÉES PAID FROM "HEATING AND LIGHTING" APPROPRIATION.

Burdine, B. W. ....	Fireman.	Stone, M. L. ....	Telephone clerk.
Duly, A. A. ....	Engineer.	Thomas, William. ....	Fireman.
Hughes, Britton. ....	Fireman.	Wood, J. W. H. ....	Do.

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
1	A. S. McClain, services. ....	\$5. 16	8	L. M. Cornwall, supplies. ....	\$58. 53
2	Clifford Wright, services. ....	15. 00	9	M. B. Pollock, services. ....	19. 35
3	F. H. Burns, services. ....	5. 25	10	Pay-roll, July, services. ....	7, 811. 16
4	G. B. Goode, services. ....	300. 00	11	George F. Pollock, services. ....	3. 87
5	Joseph Mace, freight. ....	75. 00	12	O. S. Florence, services. ....	25. 50
6	John Durand, services. ....	100. 00	13	Wm. Butterworth, services. ....	30. 65
7	S. R. Kochler, services. ....	180. 00	14	George K. Cherric, services. ....	9. 68

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
15	Great Falls Ice Co., supplies.....	\$59.36	66	John Akhurst, supplies.....	\$6.25
16	Wm. Ballantyne & Son, books ....	7.20	67	J. Wallace, specimens.....	24.00
17	J. T. Varnell & Son, supplies.....	52.08	68	Bangs & Co., specimens.....	5.50
18	M. E. Mann, books .....	72.00	69	Hensel, Bruckman & Lorbacker, freight.....	6.69
19	M. J. Geare, services .....	2.09	70	S. E. Latham, services.....	9.68
20	National Press Intelligence Co., books .....	1.10	71	H. Baumgarten, stationery.....	14.55
21	Thomas Rowland, specimens.....	7.00	72	Adams Express Co., freight .....	22.10
22	B. W. Mitchell, services.....	16.94	73	George W. Knox, freight.....	30.51
23	Henry A. Clarke & Son, station- ery.....	.75	74	S. R. Koehler, services .....	180.00
24	Emile Garet, services.....	10.00	75	N. D. C. Hodges, books .....	3.50
25	W. H. Lowdermilk & Co., books ..	14.00	76	Garden & Forest Publishing Co., books .....	4.00
26	Joseph Mace, freight .....	75.00	77	Bowers & Loy, books.....	30.70
27	Pay-roll, August, 1888, services... 8,	415.81	78	Leggatt Bros., books .....	2.00
28	G. B. Goode, services .....	300.00	79	A. L. Shipman's Sons, stationery ..	8.40
29	U. S. Express Co., freight .....	6.00	80	John Durand, services .....	100.00
30	Adams Express Co., freight .....	26.45	81	John G. Mongel & Co., stationery..	6.40
31	James Mooney, specimens .....	2.25	82	Wm. Ballantyne & Son, stationery..	65.35
32	George W. Knox, freight.....	36.90	83	F. W. Clark, specimens.....	4.00
33	Z. D. Gilman, supplies.....	14.73	84	Poole & Brooke, supplies.....	5.61
34	C. K. Worthen, specimens.....	11.50	85	C. F. Hunt, specimens.....	5.00
35	S. R. Koehler, services .....	180.00	86	L. M. Cornwall, supplies .....	65.88
36	Clifford Wright, services.....	15.00	87	North Distillery Co., supplies ....	102.35
37	E. J. Lewis, supplies .....	2.00	88	R. F. Downing & Co., freight .....	20.81
38	Edward Philpott, services .....	2.42	89	Adams Express Co., freight .....	82.90
39	E. J. Pullman, supplies.....	18.30	90	G. P. Merrill, travel .....	209.08
40	Chas. Baum, supplies .....	2.73	91	Samuel Bond, stationery .....	1.50
41	Otis T. Mason, travel.....	27.03	92	Joseph Mace, freight.....	75.00
42	Browning & Middleton, supplies..	1.50	93	G. B. Goode, services.....	333.33
43	J. Kannofsky & Co., specimens..	6.98	94	J. H. Hickcox, books .....	5.00
44	C. H. Pennypacker, specimens ....	14.50	95	Pay-roll, October, 1888, services... 8,	535.69
45	Joseph Ross, supplies.....	3.50	96	Henry Marshall, supplies .....	1.00
46	W. A. Schiellin & Co., supplies..	3.30	97	National Press Intelligence Co., books.....	2.45
47	Ed. G. Rose, services .....	6.67	98	S. R. Koehler, services .....	100.00
48	W. H. Clagett, supplies .....	10.54	99	U. S. Express Co., freight .....	19.20
49	Lorraine Tracy, services.....	24.00	100	do .....	19.65
50	Ella Olmstead, services.....	15.00	101	Brentano's, books .....	1.50
51	Marie L. Crusor, services.....	15.00	102	Davies, Turner & Co., freight.....	22.42
52	L. M. Cornwall, supplies .....	63.31	103	Leggatt Bros., books.....	12.25
53	Stephenson's Express, freight .....	8.65	104	Great Falls Ice Co., supplies.....	46.56
54	Olive R. Bendz, services .....	33.33	105	W. H. Lowdermilk & Co., books ..	3.00
55	John F. Paret, stationery .....	4.00	106	Poole & Brooke, supplies.....	5.72
56	Joseph Mace, freight .....	75.90	107	Wm. Wesley & Son, books.....	35.15
57	G. B. Goode, services.....	300.00	108	D. K. Varzhabedian, specimens ...	60.00
58	Pay-roll, September, services .....	8, 114.65	109	M. C. Flannery, freight.....	2.50
59	John Durand, services.....	100.00	110	Triibner & Co., books.....	4.48
60	Fred A. Schmidt, services .....	40.00	111	Wm. Wesley & Son, books .....	4.00
61	Great Falls Ice Co., supplies.....	59.84	112	H. Baumgarten, stationery.....	7.75
62	John Boyle, supplies.....	9.80	113	W. P. Hayden, specimens .....	10.00
63	Wyckoff, Seamans & Benedict, stationery .....	40.95	114	Rider & Addison, stationery.....	14.00
64	John B. Smith, travel .....	82.30	115	Pennsylvania R. R. Co., travel ....	22.00
65	F. P. May & Co., supplies .....	8.50	116	W. H. Lowdermilk & Co., books ..	15.00



## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure,	Amount.	No.	Items of expenditure.	Amount.
117	George W. Knox, freight.....	\$112. 19	165	Great Falls Ice Co., supplies.....	\$41. 60
118	A. L. Shipman's Sons, stationery..	12. 00	166	Leslie A. Lee, specimens.....	16. 10
119	Patrick & Carter, supplies.....	2. 50	167	John C. Parker, stationery.....	4. 50
120	National Disinfectant and Manu- facturing Co., supplies.....	11. 00	168	A. H. Young, supplies.....	4. 25
121	G. B. Goode, services.....	333. 33	169	S. F. Ware, supplies.....	7. 65
122	Joseph Mace, freight.....	75. 00	170	W. F. Hillebrand, specimens.....	50. 00
123	Pay-roll November, 1888, services	8, 399. 12	171	W. C. Willenbacher, books.....	18. 00
124	John Durand, services.....	100. 00	172	George Ryneal, jr., supplies.....	4. 50
125	Mutual District Messenger Co., services.....	3. 80	173	J. Frank Eline, supplies.....	6. 00
126	Ginn & Co., books.....	9. 00	174	Z. D. Gillman, supplies.....	11. 00
127	S. R. Koehler, services.....	100. 00	175	Leggatt Bros., books.....	4. 81
128	E. Morrison, stationery.....	77. 61	176	Mutual District Messenger Co., services.....	1. 95
129	Edward L. Wilson, books.....	2. 50	177	W. W. Davies, specimens.....	2. 50
130	Singleton & Fletcher, supplies....	3. 00	178	E. J. Pullman, supplies.....	5. 50
131	J. H. Mills & Co., supplies.....	4. 80	179	J. W. Boteler & Son, supplies.....	3. 50
132	Leggatt Bros., books.....	2. 36	180	Photo-Engraving Co., supplies....	1. 50
133	Henry J. Green, supplies.....	48. 25	181	W. H. Collins, specimens.....	9. 50
134	Arthur Stafford, stationery.....	11. 30	182	O. T. Mason, travel.....	14. 50
135	Wm. Ballantyne & Son, stationery	125. 25	183	Joseph Mace, freight.....	75. 00
136	Z. D. Gilman, supplies.....	19. 96	184	G. B. Goode, services.....	333. 33
137	Z. D. Gilman, supplies.....	24. 30	185	Pay-roll, December, 1888, services.	8, 189. 73
138	George Ryneal, jr., supplies.....	11. 44	186	J. T. Walker's Sons, supplies.....	2. 40
139	George Ryneal, jr., supplies.....	111. 96	187	J. W. Howell, specimens.....	25. 00
140	J. S. Topham, supplies.....	6. 25	188	S. R. Koehler, services.....	100. 00
141	Charles Baum, supplies.....	1. 28	189	S. R. Koehler (E. W. Jenkins), services.....	2. 25
142	John C. Parker, stationery, \$1. 50; supplies, \$20.....	21. 50	190	Thomas Wilson (E. R. Reynolds), specimens.....	62. 50
143	R. Friedländer & Sohn, books.....	58. 73	191	John Durand, services.....	100. 00
144	Henry Romeike, books.....	7. 75	192	J. G. & J. M. Waters, supplies....	5. 75
145	W. U. Telegraph Co., services.....	14. 72	193	G. W. Knox, freight.....	145. 82
146	G. B. Goode, travel.....	22. 35	194	Foreign Express Co., freight.....	. 75
147	Japanese Fan Company, speci- mens.....	1. 50	195	Mutual District Messenger Co., services.....	4. 00
148	W. A. Stearns, freight.....	2. 93	196	W. U. Telegraph Co., services.....	2. 73
149	Garden & Forest Publishing Co., books.....	1. 30	197	do.....	3. 60
150	Loren W. Green, specimens.....	10. 00	198	H. L. Cranford, supplies.....	5. 00
151	H. M. Dexter & Co., services.....	14. 78	199	Adams Express Co., freight.....	62. 80
152	Pennsylvania R. R. Co., travel....	13. 00	200	E. Morrison, stationery.....	66. 52
153	N. H. Perry, specimens.....	12. 00	201	Seaton Perry, supplies.....	1. 75
154	Francis Miller, supplies.....	5. 33	202	L. Schmid & Sons, supplies.....	29. 89
155	L. M. Cornwall, supplies.....	70. 02	203	L. D. Wilson, freight.....	2. 50
156	Lorraine Tracy, services.....	13. 50	204	L. Tracy, services.....	9. 00
157	L. M. Cornwall, supplies.....	82. 65	205	M. Joyce, supplies.....	13. 50
158	M. P. Talty, supplies.....	95. 00	206	Thomas Lee, specimens.....	75. 00
159	John Durand, services.....	100. 00	207	L. M. Cornwall, supplies.....	73. 92
160	Chas. H. Joy, services.....	3. 60	208	W. O. Atwater, services.....	15. 00
161	Wyckoff, Seamans & Benedict, stationery.....	46. 80	209	Mrs. E. S. Brinton, specimens.....	12. 00
162	W. E. Evans, services.....	32. 26	210	Lansburgh & Bro., supplies.....	2. 62
163	Thomas Marron, services.....	1. 50	211	B. C. Towne, specimens.....	4. 00
164	J. T. Varnell & Son, supplies.....	153. 84	212	G. B. Grinnell, specimens.....	55. 30
			213	Moss Engraving Co., specimens....	2. 59
			214	Lillian T. Doane, services.....	2. 00

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
215	Atlas Steamship Co., freight.....	\$5. 00	265	W. S. Yeates, books.....	\$1. 86
216	W. L. Dudley, supplies.....	2. 50	266	I. F. Hill, freight.....	4. 80
217	W. Brenninger, supplies.....	3. 00	267	James M. Southwick, specimens..	15. 39
218	Eagle Chemical Co., supplies.....	12. 00	268	Snowflake Marble Co., specimens..	5. 00
219	David Bruce, specimens.....	50. 00	269	Paul A. Garey & Co., supplies....	48. 00
220	D. B. Dearborn, freight.....	75. 48	270	Northern Distilling Co., supplies..	109. 02
221	Thomas Wilson, supplies.....	18. 96	271	J. Karr, specimens.....	10. 00
222	J. G. and J. M. Waters, supplies...	5. 75	272	Evening Star Newspaper Co., supplies.....	17. 22
223	J. E. Watkins, specimens.....	3. 00	273	Thomas Wilson, travel.....	83. 10
224	H. M. Dexter & Co., services.....	16. 08	274	Theod. Schuchardt, specimens....	14. 45
225	Great Falls Ice Co., supplies.....	82. 24	275	Church & Stephenson, supplies...	7. 60
226	W. T. Hornaday, travel.....	2. 39	276	Joseph Mace, freight.....	75. 00
227	Joseph Mace, freight.....	75. 00	277	G. Brown Goode, services.....	333. 33
228	W. Wesley & Son, books.....	41. 21	278	Pay-roll, February, services.....	8, 287. 56
229	W. Wesley & Son, books.....	14. 73	279	J. T. Walker's Sons, supplies.....	2. 95
230	Mutual District Messenger Co., services.....	1. 00	280	J. C. Parker, stationery.....	105. 69
231	Anthropological Society, books...	3. 00	281	H. Rosendale, supplies.....	3. 00
232	White Brothers, specimens.....	1. 00	282	C. Fisher, supplies.....	11. 91
233	U. S. Express Co., freight.....	27. 95	283	H. Baumgarten, stationery.....	19. 00
234	S. A. Scudder, books.....	50. 00	284	Adams Express Co., freight.....	12. 15
235	Henry Romeike, books.....	9. 60	285	L. Tracy, services.....	12. 06
236	Daniel Shanahan, supplies.....	. 54	286	F. A. Schmidt, stationery.....	7. 02
237	G. Brown Goode, services.....	333. 33	287	G. W. Knox, freight.....	82. 63
238	Pay-roll, January, services.....	8, 161. 75	288	Henry Romeike, services.....	7. 05
239	Adams Express Co., freight.....	12. 05	289	W. U. Telegraph Co., services....	. 70
240	W. A. Boyd, books.....	20. 00	290	Munn & Co., books.....	10. 50
241	Wm. C. Robinson & Son, supplies..	3. 25	291	A. E. Foote, books.....	5. 00
242	Francis Miller, supplies.....	14. 65	292	A. T. Wayne, specimens.....	4. 25
243	W. H. Clagett, supplies.....	10. 54	293	S. R. Koehler, services.....	100. 00
244	S. R. Koehler, services.....	100. 00	294	A. L. Shipman's Sons, stationery..	2. 70
245	John Durand, services.....	100. 00	295	L. W. Morris & Son, freight.....	1. 86
246	R. Hitchcock, services.....	58. 06	296	M. L. Linell, services.....	50. 89
247	U. S. Express Co., freight.....	21. 70	297	U. S. Express Co., freight.....	214. 65
248	Judd & Detweiler, supplies.....	10. 00	298	R. Hitchcock, services.....	150. 00
249	E. G. Weeeler, supplies.....	18. 00	299	John Durand, services.....	100. 00
250	Wyckoff, Seamans & Benedict, sta- tionery.....	2. 50	300	First Japan Manufacturing and Trading Co., specimens.....	302. 80
251	Stephenson's Express, freight....	11. 40	301	Z. D. Gilman, supplies.....	26. 30
252	L. M. Cornwall, supplies.....	52. 74	302	Ed. Maybridge, books.....	241. 00
253	J. E. Lucas, services.....	36. 00	303	C. Becker, supplies.....	6. 00
254	A. E. Foote, specimens.....	46. 00	304	G. Ryneal, jr., supplies.....	10. 97
255	S. Raymond Roberts, books.....	30. 00	305	E. L. Greene, books.....	2. 50
256	F. W. Devoe & Co., stationery....	17. 88	306	Poole & Brooke, supplies.....	31. 36
257	Edw. L. Wilson, books.....	2. 50	307	Great Falls Ice Co., supplies.....	26. 56
258	W. U. Telegraph Co., services....	1. 74	308	N. P. Scudder, books.....	3. 75
259	Mutual District Messenger Co., services.....	1. 65	309	J. F. Paret, stationery.....	2. 20
260	Pitt & Scott's Foreign Express, freight.....	10. 75	310	H. Hoffa, stationery.....	1. 25
261	Raoul Heilbronner, specimens....	174. 76	311	Pay-roll, part of March, services..	40. 50
262	George W. Knox, freight.....	22. 87	312	L. M. Cornwall, supplies.....	42. 17
263	Great Falls Ice Co., supplies.....	29. 60	313	Charles Becker, supplies.....	17. 79
264	Ermanno Loescher, books.....	8. 40	314	F. P. Dewey, travel.....	40. 40
			315	F. W. Christern, books.....	28. 75
			316	C. H. Roberts, supplies.....	12. 50

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
317	H. H. & C. S. Brimley, specimens ..	\$7. 10	369	Moss Engraving Co., books .....	\$3. 00
318	W. F. Murphy's Sons, stationery ..	28. 00	370	Robert Boyd, supplies .....	1. 00
319	Northern Distilling Co., supplies ..	103. 73	371	Goldsborough & Co., specimens ..	18. 00
320	J. G. & J. M. Waters, supplies .....	4. 00	372	S. D. Peet, books .....	4. 00
321	Pay-roll, part of March, services ..	58. 87	373	S. F. Denton, services .....	1. 50
322	Sunday Herald, supplies .....	5. 52	374	J. E. Lucas, services .....	7. 00
323	Hardy du Dreueuf, specimens .....	20. 00	375	Great Falls Ice Co., supplies .....	30. 18
324	H. A. Ward, specimens .....	23. 70	376	A. E. Cooke, supplies .....	10. 00
325	John B. Smith, specimens .....	500. 09	377	B. Mooney, services .....	15. 00
326	G. W. Knox, freight .....	33. 00	378	F. H. Knowlton, services .....	70. 00
327	C. W. Sisson, specimens .....	5. 00	379	George W. Knox, freight .....	21. 35
328	F. A. Brockhaus, books .....	35. 40	380	F. Keppel & Co., specimens .....	51. 00
329	W. Engelmann, books .....	8. 23	381	F. B. Webster, specimens .....	. 75
330	W. Wesley & Son, books .....	13. 87	382	C. Schoenhof, supplies .....	4. 35
331	Joseph Mace, freight .....	75. 00	383	Dennison Manufacturing Co., sta- tionery .....	74. 24
332	Robert Saunders, services .....	15. 00	384	John Durand, services .....	100. 00
333	J. W. Branson, services .....	15. 00	385	W. Ballantyne & Son, stationery ..	48. 73
334	G. B. Goode, services .....	333. 33	386	W. H. Lowdermilk & Co., books ..	4. 50
335	Pay-roll, March, services .....	8, 884. 58	387	George Ryneal, jr., supplies .....	15. 25
336	S. H. Bond, stationery .....	1. 00	388	W. H. Butler, supplies .....	7. 60
337	Easton & Rupp, stationery .....	80. 23	389	Z. D. Gilman, supplies .....	16. 83
338	Pay-roll, special, services .....	76. 50	390	Adams Express Co., freight .....	13. 95
339	C. D. Walcott, specimens .....	73. 50	391	do .....	24. 55
340	S. R. Koehler, services .....	100. 00	392	L. Schmid & Sons, supplies .....	15. 15
341	E. N. Andrus, specimens .....	20. 00	393	U. S. Express Co., freight .....	41. 50
342	W. F. Hewett, supplies .....	18. 64	394	G. Kohn, specimens .....	3. 00
343	Thomas Dowling, specimens .....	2. 00	395	Mutual District Messenger Co., services .....	2. 00
344	F. Miller, supplies .....	2. 80	396	do .....	1. 30
345	Z. D. Gillman, supplies .....	11. 80	397	Brodix Publishing Co., books .....	2. 00
346	William Ballantyne & Son, sta- tionery .....	242. 31	398	J. B. Smith, services .....	97. 78
347	Charles Willoughby, specimens ..	7. 12	399	M. B. Pollock, services .....	20. 00
348	J. T. Varnell & Son, supplies .....	101. 34	400	Samuel Harrison, services .....	15. 00
349	Mutual District Messenger Co., services .....	1. 45	401	H. M. Dexter & Co., services .....	17. 92
351	A. L. Shipman's Sons, stationery ..	9. 60	402	H. C. Taylor, supplies .....	28. 92
351	J. B. Clayton, services .....	10. 00	403	J. C. Parker, stationery .....	33. 00
352	E. G. Wheeler, supplies .....	3. 00	404	F. A. Brockhaus, books .....	15. 25
353	George Ryneal, jr., supplies .....	6. 50	405	C. Wunderlich & Co., specimens ..	117. 09
354	W. U. Telegraph Co., services .....	5. 71	406	J. J. Desmond, services .....	29. 33
355	Leggett Bros, books .....	3. 70	407	F. Meder, specimens .....	5. 50
356	L. M. Cornwall, supplies .....	53. 88	408	G. B. Goode, services .....	333. 33
357	Robert Saunders, services .....	15. 00	409	Joseph Mace, freight .....	75. 00
358	J. W. Bronson, services .....	15. 00	410	Pay-roll, April, services .....	8, 838. 95
359	P. L. Jony, specimens .....	125. 00	411	S. R. Koehler, services .....	100. 00
360	Browning & Middleton, supplies ..	5. 20	412	F. W. True, travel .....	19. 30
361	James H. McGill, supplies .....	1. 50	413	Church & Stephenson, supplies ..	6. 00
362	L. Moxley, supplies .....	10. 60	414	Wesley & Son, specimens .....	126. 69
363	W. F. Murphy's Sons, stationery ..	12. 50	415	H. A. Clarke & Son, supplies .....	80. 00
364	L. S. Foster, books .....	3. 00	416	William Taylor, specimens .....	11. 00
365	Westermann & Co., books .....	. 71	417	The Capital, supplies .....	1. 37
366	G. L. English & Co., specimens .....	11. 00	418	W. F. Hewett, supplies .....	31. 48
367	Henry Romeike, books .....	13. 30	419	E. Morrison, stationery .....	113. 54
368	M. Knoedler & Co., specimens .....	7. 30	420	L. Tracy, services .....	9. 00

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
421	J. Benjamin Clayton, services.....	\$20. 00	475	C. S. Bement, specimens.....	\$100. 00
422	C. S. Kalb, services.....	8. 33	476	G. L. English & Co., specimens....	26. 50
423	T. O. Weigel, books.....	88. 63	477	J. Elias & Son, specimens.....	1. 25
424	B. F. Stevens, books.....	21. 25	478	W. W. Adams, specimens.....	15. 00
425	E. Loescher, books.....	8. 40	479	W. H. Butler, supplies.....	. 30
426	W. Wesley & Son, books.....	8. 37	480	W. Ballantyne & Son, stationery..	36. 20
427	Taylor & Francis, books.....	2. 54	481	W. U. Telegraph Co., services.....	2. 70
428	Emil Soeding, books.....	2. 00	482	J. H. Mills & Co., supplies.....	80. 90
429	W. Ballantyne & Son, books.....	9. 54	483	U. S. Express Co., freight.....	19. 15
430	Great Falls Ice Co., supplies.....	32. 93	484	.....do.....	68. 00
431	E. Steiger & Co., books.....	5. 00	485	Lansburgh & Bro., supplies.....	4. 25
432	J. Benisch, services.....	. 25	486	Dennison Manufacturing Co., sup- plies.....	140. 63
433	Evening Star, books.....	1. 58	487	H. Wunderlich & Co., specimens..	40. 00
434	S. Raymond Roberts, books.....	10. 00	488	E. E. Thompson, specimens.....	10. 00
435	J. Durand, services.....	100. 00	489	George Ryncal, jr., supplies.....	7. 14
436	Chas. H. Arnold, services.....	1. 00	490	E. Morrison, stationery.....	5. 00
437	L. M. Cornwall, supplies.....	53. 23	491	Mutual District Messenger Co., services.....	. 40
438	L. Amateis, specimens.....	40. 00	492	Henry Romeyn, specimens.....	30. 00
439	Ed. W. Ashford, services.....	20. 52	493	C. H. Worthen, specimens.....	22. 75
440	Joseph Mace, freight.....	75. 00	494	Brentanos, books.....	10. 60
441	G. Brown Goode, services.....	333. 33	495	G. Kohn, specimens.....	5. 00
442	Pay-roll, May, services.....	8, 533. 11	496	L. Amateis, specimens.....	50. 00
443	Edward Philpitt, services.....	16. 13	497	L. Tracy, services.....	6. 00
444	John Durand, services.....	100. 00	498	C. C. Carroll, supplies.....	111. 00
445	J. E. Giles, services.....	25. 50	499	E. J. Pullman, supplies.....	260. 17
446	B. & O. R. R., freight.....	1. 47	500	Wyckoff, Seamans & Benedict, stationery.....	29. 40
447	.....do.....	3. 18	501	Robert Boyd, supplies.....	1. 00
448	S. F. Ware, supplies.....	24. 87	502	G. E. Kennedy & Son, supplies....	. 50
449	W. E. Stockett & Co., supplies.....	2. 75	503	M. A. Tappan, supplies.....	102. 00
450	W. S. Thompson, supplies.....	4. 50	504	O. T. Mason, travel.....	31. 75
451	E. J. Lewis, supplies.....	1. 75	505	Easton & Rupp, stationery.....	4. 74
452	T. W. Sweeney, travel.....	3. 65	506	T. M. Stoughton, specimens.....	150. 04
453	Walter Hough, travel.....	3. 65	507	C. H. Hitchcock, travel.....	6. 00
454	S. R. Koehler, services.....	100. 00	508	L. E. Ricksecker, specimens.....	7. 40
455	W. F. Hewett, supplies.....	33. 68	509	Joséph Welch, specimens.....	35. 00
456	J. H. McGill, supplies.....	3. 50	510	L. M. Cornwall, supplies.....	56. 00
457	W. H. Clagett, supplies.....	10. 54	511	J. G. and J. M. Waters, supplies..	11. 50
458	J. C. Parker, stationery.....	31. 11	512	Mutual District Messenger Co., services.....	1. 40
459	E. Morrison, stationery.....	118. 00	513	W. Ballantyne & Son, stationery..	16. 93
460	R. G. Campbell, supplies.....	5. 10	514	L. Schmid & Sons, supplies.....	9. 60
461	C. Schneider, supplies.....	10. 00	515	Great Falls Ice Co., supplies.....	38. 30
462	C. H. Joy, supplies.....	1. 25	516	W. U. Telegraph Co., services.....	8. 50
463	M. Lindsay, supplies.....	4. 75	517	J. F. Eline, supplies.....	4. 00
464	Adams Express Co., freight.....	35. 45	518	W. S. Thompson, supplies.....	6. 25
465	T. H. McAllister, specimens.....	13. 50	519	G. B. Goode, services.....	333. 33
466	H. Benton, specimens.....	25. 00	520	John Durand, services.....	100. 00
467	L. S. Foster, books.....	2. 35	521	S. R. Koehler, services.....	100. 00
468	E. E. Thompson, specimens.....	30. 00	522	S. R. Koehler, specimens.....	1. 00
469	W. F. Murphy's Sons, stationery..	28. 80	523	W. H. Nalley, services.....	41. 00
470	A. S. Clark, books.....	. 35	524	Joseph Mace, freight.....	75. 00
471	John Russell & Son, specimens...	11. 50			
472	Geo. W. Knox, freight.....	77. 99			
473	J. L. Potter, specimens.....	25. 00			
474	J. B. Lippincott Co., books.....	5. 35			

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
525	George Ryncal, jr., supplies.....	\$20.25	578	A. Boncard, specimens.....	\$62.80
526	H. Romeike, books.....	9.50	579	Rob. Kirmes, specimens.....	79.04
527	H. Reid, specimens.....	3.00	580	Paul Klineksleek, books.....	4.54
528	John Wilson & Son, supplies.....	4.00	581	Robert Boyd, supplies.....	1.00
529	Pay-roll, June, 1889, services.....	8,328.54	582	J. H. Mills & Co., supplies.....	8.70
530	B. & O. R. R., freight.....	7.87	583	E. J. Pullman, supplies.....	21.64
531	... do.....	.72	584	Easton & Rupp, stationery.....	32.35
532	Missouri Pacific R. R., freight....	3.29	585	F. A. Schmid, stationery.....	3.15
533	Union Pacific R. R., freight.....	11.14	586	G. C. McLean, travel.....	3.70
534	... do.....	1.10	587	L. Schmid & Sons, supplies.....	7.80
535	Southern Pacific R. R., freight....	.92	588	Great Falls Ice Co., supplies.....	42.72
536	... do.....	10.19	589	Wm. Ballantyne & Son, stationery	1.23
537	J. C. Ergood & Co., supplies.....	9.70	590	Z. D. Gilman, supplies.....	46.51
538	L. Moxley, supplies.....	12.60	591	Adams Express Co., freight.....	22.00
539	Stephenson's Express, freight....	4.45	592	Geo. L. English & Co., specimens	71.10
540	B. F. Jackson, specimens.....	2.50	593	Brentanos, stationery.....	.90
541	G. Kohn, specimens.....	2.00	594	Charles Becker, supplies.....	13.88
542	J. Büttikofer, specimens.....	30.00	595	George W. Knox, freight.....	27.00
543	C. F. Adams, specimens.....	50.00	596	W. F. Hewett, supplies.....	30.12
544	W. F. Hewett, supplies.....	14.14	597	H. M. Dexter & Co., services.....	18.89
545	G. W. Knox, freight.....	28.13	598	E. Morrison, stationery.....	1.30
546	Pennsylvania R. R. Co., freight....	27.50	599	J. W. Beath, specimens.....	40.75
547	L. Amateis, specimens.....	17.00	600	F. A. Schneider, supplies.....	4.75
548	I. M. Wynne, services.....	18.67	601	H. Baumgarten, stationery.....	1.00
549	Adams Express Co., freight.....	38.30	602	W. Englemann, books.....	1.42
550	W. U. Telegraph Co., services.....	2.38	603	Dulan & Co., books.....	4.24
551	F. Meder, books.....	9.00	604	Erdman & Schlaus, specimens....	2.41
552	U. S. Express Co., freight.....	108.20	605	Thomas Laurie, specimens.....	5.82
553	Woodward & Lothrop, supplies....	42.79	606	Rollin & Fenardent, books.....	5.04
554	M. J. Geare, services.....	38.86	607	R. Friedlander & Sohn, books....	2.54
555	L. Tracy, services.....	6.00	608	W. Wesley & Son, books.....	23.30
556	Washington Post, supplies.....	10.50	609	Edw. Gerrard, specimens.....	152.21
557	W. S. Yeates, travel.....	58.44	610	C. Fischer, supplies.....	2.65
558	N. P. Hines, supplies.....	12.00	611	S. F. Ware, supplies.....	16.00
559	Church & Stephenson, supplies....	6.00	612	M. Lindsay, supplies.....	1.25
560	Mrs. E. A. Bruhl, specimens.....	129.00	613	U. S. Express Co., freight.....	9.55
561	A. E. Cooke, supplies.....	8.00	614	J. F. Eline, supplies.....	1.50
562	J. J. Decker, stationery.....	2.00	615	W. H. Harrover, supplies.....	1.15
563	Moss Engraving Co., supplies....	77.00	616	Church & Stephenson, supplies...	2.00
564	Mutual District Messenger Co., services.....	1.45	617	W. U. Telegraph Co., services....	2.74
565	Library Bureau, stationery.....	.60	618	William Niven, specimens.....	38.45
566	F. W. Christern, books.....	1.35	619	O. T. Barron, specimens.....	5.00
567	E. D. Cope, specimens.....	11.00	620	George Ryncal, jr., supplies.....	.70
568	M. A. Tappan, supplies.....	4.20	621	Shepherd & Hurly, services.....	4.50
569	W. J. Topley, specimens.....	3.75	622	Wyckoff, Seamans & Benedict, supplies.....	2.40
570	L. M. Cornwall, supplies.....	49.75	623	E. Koch, books.....	10.00
571	Brentanos, books.....	6.30	624	F. C. Brown, services.....	60.00
572	W. Naylor, freight.....	28.50	625	Mrs. E. A. Bruhl, specimens.....	50.00
573	Bouffils & Co., specimens.....	10.00	626	C. C. Carroll, supplies.....	57.00
574	J. J. Desmond, travel.....	3.50	627	S. E. Cassino, books.....	2.50
575	H. Romeyn, specimens.....	10.00	628	Washington Critic Co., supplies..	10.40
576	W. Wesley & Son, books.....	7.43	629	J. C. Parker, stationery.....	14.86
577	J. & A. Churchill, specimens.....	11.92	630	Wood & Forsyth, specimens.....	1.50

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR PRESERVATION OF COLLECTIONS, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
631	Photo-Engraving Co., supplies ..	\$61.06	649	Southern Pacific R. R., freight ....	\$2.12
632	Moss Engraving Co., stationery ..	1.00	650	do .....	2.12
633	Evening Star Co., supplies .....	12.50	651	B. & O. R. R., freight .....	2.15
634	J. G. & J. M. Waters, supplies ..	4.00	652	do .....	.72
635	J. B. Kendall, supplies .....	1.50	653	Chicago, Rock Island & Pacific R.	
636	M. Joyce, supplies .....	12.00		R., freight .....	.91
637	H. Harkness, supplies .....	.70	654	do .....	1.78
638	Chapman & Taylor, stationery ..	.10	655	W. H. Lowdermilk & Co., books ..	9.05
639	A. C. Bancroft, freight .....	10.63	656	Leggatt Brothers, books .....	5.00
640	E. Godey, supplies .....	.90	657	A. S. Clark, books .....	2.65
641	Alaska Commercial Co., supplies	100.68	658	P. L. Jouy, specimens .....	319.15
642	Alaska Commercial Co., specimens	30.50	659	Ashton Todd, books .....	3.30
643	S. F. Peckham, specimens .....	23.03	660	R. Hitchcock, specimens .....	200.00
644	J. T. Duncey, specimens .....	2.35	661	Émile Deyrolle, supplies .....	13.91
645	E. Rey, specimens .....	15.68	662	George Bird Grinnell, specimens	65.00
646	W. Wesley & Son, specimens .....	75.83	663	Émile Deyrolle, specimens .....	169.29
647	S. R. Sturdevant, specimens .....	12.06	664	William Wesley & Son, books ....	259.66
648	Southern Pacific R. R., freight ...	34.50			

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR FURNITURE AND FIXTURES, 1888-'89.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
1	Pay-roll, July, 1888, services .....	\$1,130.03	28	Patrick & Carter, repairing engine	\$3.75
2	C. H. Darcy, services .....	42.00	29	Wood & Forsyth, label frames ....	9.00
3	J. W. Duval, services .....	9.00	30	Pay-roll, November, services .....	1,362.66
4	Church & Stephenson, lumber ...	185.93	31	W. Bruce Gray, drawings for cases.	170.00
5	Pay-roll, August, 1888, services ...	1,499.00	32	John C. Parker, letter-press .....	8.50
6	R. L. Reed, services .....	49.00	33	John A. Baker, crank-wheel .....	3.50
7	R. W. Ryan, services .....	60.00	34	Woodward & Lothrop, plush .....	17.00
8	Melville Lindsay, rubber stopples	23.04	35	George Ryneal, jr., putty .....	1.90
9	Excelsior Varnish Works, varnish	3.00	36	E. E. Jackson & Co., stands .....	50.00
10	W. J. Walker, services .....	16.00	37	W. E. Gavit, racks .....	19.20
11	Pay-roll, September, 1888, services		38	Eimer & Amend, rubber stopples	207.60
	ices .....	1,526.50	39	George P. Clark, rubber truck-	
12	F. P. May & Co., hardware .....	11.96		wheel bands .....	10.66
13	D. Ballauf, wooden cylinders .....	5.00	40	Hayward & Hutchinson, fire-set ..	10.50
14	Church & Stephenson, lumber ...	156.84	41	E. F. Brooks, lamp .....	11.00
15	G. B. Clark & Son, slate .....	22.75	42	Church & Stephenson, lumber ...	371.39
16	E. G. Wheeler, cage .....	10.00	43	H. Rosendale, hammers .....	4.50
17	Fritz Noebe, services .....	12.00	44	W. B. Moses & Son, desk .....	33.00
18	L. R. Trembly, glass .....	15.00	45	F. P. May & Co., hardware .....	51.61
19	C. J. Fanning, slate-roofing armory	112.00	46	Excelsior Varnish Works, hard-	
20	W. H. Hocke, plush .....	3.00		oil finish .....	11.50
21	B. H. Shoemaker, plate glass .....	26.50	47	T. H. McAllister, stereopticon ...	225.00
22	Pay-roll, October, services .....	1,830.66	48	F. W. Devoe & Co. ....	76.80
23	Julius Lansburgh, chairs .....	4.50	49	G. Ryneal, jr., glue, white lead, etc	26.20
24	F. A. Belt, posts .....	2.50	50	Ross & Co., lens .....	268.62
25	W. H. Douglass, hinges .....	209.88	51	Thomas Wilson, desk, case, and	
26	W. B. Williams, folding chairs ...	150.00		chair .....	45.00
27	F. A. Schneider, hardware, glue,		52	Thonet Bros., stand legs .....	86.35
	etc .....	34.50	53	F. Miller, turpentine .....	11.75

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR FURNITURE AND FIXTURES, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
54	F. A. Schmidt, instruments.....	\$3.20	102	Pay-roll, February, services.....	\$1,511.45
55	H. J. Brown, brass tags.....	125.00	103	F. P. May & Co., hardware.....	85.53
56	Pay-roll, December, 1888, services	1,316.08	104	George N. Garrett, hardware.....	15.00
57	Charles Woodington, pedestal...	25.00	105	M. Lindsay, hose.....	177.98
58	John Schmitt, insect boxes.....	110.00	106	Albert Martin, services.....	27.00
59	C. A. Schneider's Sons, iron beams.....	422.64	107	George A. Mills, folding screens..	68.75
60	Church & Stephenson, lumber....	56.45	108	Smith & Wardwell, mirror.....	1.89
61	Robert Boyd, iron work.....	33.33	109	Excelsior Varnish Works, paints...	47.09
62	T. H. McAllister, cylinders, sig- nal-bells, etc.....	69.92	110	F. W. DeVoe & Co., paints.....	14.00
63	W. H. Butler, paints.....	55.35	111	W. E. Gavit, racks.....	38.40
64	Excelsior Varnish Works, paints...	3.00	112	L. Schmid & Sons, wire supports..	17.50
65	J. Carbutt, negative films.....	13.68	113	William Busching, services.....	9.00
66	J. M. Lloyd, brick work.....	201.36	114	Church & Stephenson, lumber...	279.55
67	Eimer & Amend, chemicals.....	14.11	115	C. Schneider, locks.....	45.00
68	Lansburgh & Bro., velvet.....	57.88	116	J. E. Watkins, travel.....	6.77
69	Whitall, Tatum & Co., glass bottles.....	17.70	117	Z. D. Gilman, paints.....	49.15
			118	George Ryneal, jr., paints.....	40.50
			119	W. B. Moses & Son, desk.....	36.00
			120	F. P. May & Co., hardware.....	8.71
85	Herring & Co., fire-proof safe....	412.12	136	W. B. Williams, mat and chairs....	53.00
86	William Fisher, brass work.....	64.33	138	L. H. Schneider's Son, hardware...	163.17
87	James Hughes, plastering.....	59.00	139	Jacob Naylor, iron-work.....	109.46
88	R. McCormick, services.....	15.00	140	Cincinnati Corrugating Co., iron..	3.00
89	Wyckoff, Seamans & Benedict, type-writer.....	85.00	141	E. G. Wheeler, lead.....	1.00
90	L. H. Schneider's Son, hardware....	37.30	142	George Ryneal, jr., paints.....	37.75
91	F. W. De Voe & Co., paints.....	118.80	143	E. E. Jackson & Co., frames and blocks.....	45.00
92	Edw. Burroughs, services.....	42.00	144	E. E. Jackson & Co., blocks.....	6.00
93	Fritz Noebe, services.....	42.00	145	Wood Brothers, drawers.....	18.02
94	Charles Bergmann, services.....	9.00	146	F. W. DeVoe & Co., paints.....	6.75
95	L. H. Hopkins, pins.....	6.75	147	Robert Boyd, iron and tin.....	18.85
96	Charles Woodington, label frames	50.00	148	H. Hollander, spittoons.....	3.19
97	Curry & Burchette, wall case....	235.00	149	F. P. May & Co., hardware.....	128.30
98	Church & Stephenson, lumber....	270.10	150	G. A. Mills, mahogany tables.....	1,250.00
99	William Busching, services.....	42.00	151	Wood Brothers, drawers.....	154.50
100	Fritz Noebe, services.....	9.00	152	F. P. May & Co., hardware.....	25.16
101	V. E. Burdick, ladder.....	15.00	153	B. H. Shoemaker, plate-glass.....	172.72

## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR FURNITURE AND FIXTURES, 1888-'89—Continued.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
154	J. W. Barker, copper tanks .....	\$87. 50	200	George Ryneal, jr., white lead....	\$20. 25
155	L. H. Schneider's Son, hardware...	13. 17	201	Pay-roll, June, 1889, services .....	1, 351. 33
156	Wm. H. Butler, oils and brushes ..	48. 25	202	M. G. Copeland, awnings.....	24. 00
157	N. V. Randolph & Co., paper-trays.	75. 81	203	James Hughes, plastering.....	125. 00
158	B. & P. R. R. Co., travel .....	7. 25	204	Chester Steel Casting Co., steel...	100. 36
159	Pay-roll, April, 1889, services .....	1, 231. 08	205	F. H. Ganter, metal frame .....	20. 00
160	Church & Stephenson, lumber .....	333. 94	206	L. H. Schneider's Son, hardware..	140. 95
161	Curry & Burchette, mahogany columns .....	950. 40	207	Woodward & Lothrop, cloth, sheet- ing, etc .....	69. 11
162	D. Shannaban, brushes .....	17. 51	208	Franklin & Co., engravers' loops..	2. 50
163	G. A. Mills, mahogany tables .....	1, 250. 00	209	H. Rosendale & Co., tools.....	6. 75
164	Wood Brothers, unit drawers.....	429. 55	210	F. W. Pilling, cages.....	160. 80
165	Holbrook Brothers, plate glass.....	353. 09	211	H. Hoffa, stand .....	2. 00
166	Geo. A. Mills, mahogany cases .....	1, 200. 00	212	F. A. Belt, walnut .....	48. 75
167	J. B. Hammond, unit boxes .....	81. 00	213	George W. Dant, brick-work .....	23. 50
168	Pay-roll, May, 1889, services .....	1, 304. 33	214	The F. F. Adams Co., traps.....	9. 00
169	Church & Stephenson, lumber .....	92. 10	215	W. E. Gavit, brackets.....	306. 63
170	C. F. Carter & Co., hardware.....	12. 55	216	L. Schmid & Sons, wire frames....	13. 00
171	F. A. Schneider, hardware .....	32. 03	217	Church & Stephenson, lumber.....	138. 09
172	F. P. May & Co., hardware .....	12. 50	218	Robert Boyd, metal work.....	118. 42
173	T. Somerville & Sons, brass.....	20. 81	219	E. J. Pullman, hawk-eye camera..	25. 00
174	S. Corbett, tin storage cases .....	72. 50	220	L. H. Schneider's Son, hardware..	28. 52
175	L. H. Schneider's Son, hardware ..	50. 93	221	W. Bruce Gray, drawings.....	65. 00
176	John Schmitt, insect cabinets.....	250. 00	222	Charles Becker, paint .....	4. 25
177	Wood Bros., book-cases .....	112. 50	223	M. W. Beveridge, pitchers, dusters, etc .....	13. 73
178	M. W. Beveridge, brushes, buck- ets, etc.....	116. 62	224	Barber & Ross, wire and tacks...	. 70
179	Lansburgh & Bro., sheeting, etc..	20. 66	225	Wood Bros., pine drawers.....	273. 90
180	William H. Butler, glazier's dia- mond and turpentine .....	23. 00	226	George White & Sons, machinists.	10. 00
181	E. G. Wheeler, lead.....	4. 00	227	F. P. May & Co., hardware and metal .....	55. 74
182	G. A. Mills, mahogany table cases.	84. 00	228	George Watts, dusters.....	. 75
183	S. Bache & Co., plate glass.....	217. 50	229	Thomas Somerville & Sons, brass- work .....	4. 10
184	E. J. Pullman, photo-outfit.....	49. 98	230	Belt & Dyer, walnut bird-stands..	31. 10
185	Robert Boyd, hardware.....	3. 25	231	Wood Bros., pine drawers.....	140. 30
186	L. Eisinger, painting.....	4. 00	232	E. E. Jackson & Co., pine storage boxes.....	31. 00
187	Barber & Ross, tools.....	1. 95	233	E. G. Wheeler, old lead .....	2. 50
188	Yale and Towne Manufacturing Co., locks.....	8. 05	234	L. H. Schneider's Son, hardware..	1. 55
189	E. E. Jackson & Co., mahogany case and pine case.....	156. 85	235	do .....	1. 65
190	B. H. Shoemaker, crystal and plate glass.....	157. 10	236	J. E. Watkins, travel.....	5. 45
191	Brock Bros, tin case.....	9. 55	237	F. P. May & Co., hardware.....	2. 00
192	J. Lansburgh, walnut desk .....	35. 00	238	Wood Bros., trays and drawers...	205. 00
193	T. H. McAllister, photo-supplies.	13. 13	239	W. Fisher, book-fasteners.....	14. 48
194	E. Miller, crystal glass.....	13. 50	240	J. M. Queen & Co., glass vials....	42. 50
195	E. E. Jackson & Co., mahogany cases .....	2, 360. 00	241	E. E. Jackson & Co., cases.....	345. 50
196	E. E. Jackson & Co., mahogany cases .....	403. 75	242	E. E. Jackson & Co., case .....	45. 00
197	Church & Stephenson, lumber...	220. 53	243	Thomas W. Smith, case.....	53. 00
198	G. A. Mills, repairs to irons and cases .....	20. 60	244	Chas. T. Carter & Co., solder.....	1. 50
199	W. H. Douglass, brass-work.....	8. 70	245	James W. Queen & Co., vials....	20. 00
			246	George A. Mills, case.....	82. 24
				Total .....	39, 995. 10



## DETAILED LIST OF VOUCHERS FOR EXPENDITURES FOR HEATING AND LIGHTING, 1888-'89.

No.	Items of expenditure.	Amount.	No.	Items of expenditure.	Amount.
1	Pay-roll, July, 1888, services .....	\$530.00	38	C. K. Ditto, services .....	\$15.00
2	Gas Company, gas .....	65.51	39	Pay-roll, March, services .....	425.00
3	Pay-roll, August, 1888, services .....	530.00	40	Wm. E. Hodge, coal .....	24.85
4	Gas Company, gas .....	70.64	41	Royce & Marean, electric work .....	7.24
5	Pay-roll, September, services .....	465.00	42	Mutual District Messenger Co., box rent .....	10.00
6	B. Brown, telephones .....	6.00	43	Gas Company, gas .....	109.13
7	Wm. E. Hodge, coal .....	2,930.15	44	A. H. Young, heating repairs .....	1.00
8	Gas Company, gas .....	80.88	45	Kennedy Bros., wood .....	13.00
9	T. Somerville & Sons, heating re- pairs .....	4.95	46	Samuel Emery, coal .....	2.00
10	W. C. Robinson & Son, oil .....	3.23	47	M. E. Pierce, telephones .....	4.00
11	A. H. Young, heating repairs .....	4.00	48	Chesapeake and Potomac Tele- phone Co., telephones .....	207.70
12	Pay-roll, October, services .....	465.00	49	Mutual District Messenger Co., box rent .....	10.00
13	Chesapeake and Potomac Tele- phone Co. telephones .....	178.86	50	do .....	10.00
14	Gas Company, gas .....	93.64	51	Pay-roll, April, services .....	425.00
15	Pay-roll, November, services .....	465.00	52	Gas Company, gas .....	102.26
16	Mutual District Messenger Co., box rent .....	20.00	53	William E. Hodge, coal .....	998.35
17	W. E. Hodge, coal .....	51.39	54	A. B. Smith, wood .....	6.20
18	A. B. Smith, wood .....	12.00	55	Pay-roll, May, 1889, services .....	425.00
19	Royce & Marean, electric work .....	40.00	56	T. Somerville & Sons, heating re- pairs .....	.85
20	Mutual District Messenger Co., box rent .....	10.00	57	Gas Company, gas .....	79.14
21	Gas Company, gas .....	107.88	58	Mutual District Messenger Co., box rent .....	10.00
22	Pay-roll, December, services .....	465.00	59	John K. Ward, heating repairs .....	153.05
23	Mutual District Messenger Co., box rent .....	10.00	60	Mutual District Messenger Co., box rent .....	10.00
24	Gas-Light Company, gas .....	123.88	61	F. Miller, heating repairs .....	1.25
25	Mutual District Messenger Co., box rent .....	10.00	62	W. W. Tupper & Co., heating re- pairs .....	200.00
26	Pay-roll, January services .....	425.00	63	Pay-roll, June, 1889, services .....	375.00
27	T. Somerville & Sons, heating re- pairs .....	20.87	64	J. C. Ergood & Co., oil .....	5.04
28	Arthur B. Smith, wood .....	40.00	65	Gas Company, gas .....	77.26
29	Gas-Light Company, gas .....	145.89	66	Mutual District Messenger Co., box rent .....	10.00
30	Chesapeake and Potomac Tele- phone Co., telephones .....	201.60	67	Chesapeake and Potomac Tele- phone Co., telephones .....	200.00
31	Mutual District Messenger Co., box rent .....	10.00	68	Browning & Middleton, candles .....	1.10
32	W. C. Lewis & Co., heating repairs .....	22.75	69	Royce & Marean, electric bell, etc. .....	11.00
33	W. E. Hodge, coal .....	110.49	70	T. Somerville & Sons, heating re- pairs .....	19.61
34	Pay-roll, February, services .....	425.00	71	John K. Ward, heating repairs .....	183.33
35	Gas Light Company, gas .....	132.26	72	E. F. Brooks, glass globes, etc. ....	11.00
36	M. E. Pierce, telephones .....	2.00	73	Royce & Marean, electric work .....	567.00
37	T. Somerville & Sons, heating re- pairs .....	6.76		Total .....	12,996.01

## CORRESPONDENCE AND REPORTS.

This department of the administrative work is under the charge of Mr. R. I. Geare, executive clerk.

The office force includes a stenographer, a type-writer, an indexer, a record clerk, and a messenger.

There has been prepared for the signature of the Secretary of the Smithsonian Institution and of the Assistant Secretary in charge of the Museum, 5,349 official papers, including 2,323 letters on miscellaneous Museum matters; 263 reports on material transmitted for examination; 1,138 acknowledgments of specimens given or lent to the Museum; 374 letters transmitting specimens to museums, colleges, schools, and individual investigators. In addition, nearly a thousand letters in regard to Museum publications have been written.

A special feature of the Museum correspondence is in connection with requests for technical information upon various subjects. The letters prepared in reply usually embody data supplied by the curators to whom the letters have been referred.

For the benefit of persons interested in the details of the administrative work of the Museum, as well as for the purpose of placing them on record for reference in future years, the following statement of the contents of letters asking for information, received during the year, has been prepared by Mr. Geare. It is needless to say that the publication of the details of office business in such minuteness will not form a regular feature of the Museum report.

## STATEMENT OF LETTERS ASKING FOR INFORMATION.

- ABBOTT, Dr. C. C. (Trenton, New Jersey), having found the young of the genus *Tyllosurus* in the Delaware River, desires to know if their occurrence in those waters is common.
- ADAIR, J. M. (Glen Ella, Louisiana), sends description of a coin and desires information concerning it, also an opinion as to its value.
- ALGER, Mrs. C. J. (Burlington, Vermont), desires information regarding the occurrence of rust on small fruits.
- ALLEN, J. C. (White Gate, Virginia), sends description of a fossil for determination of the species.
- ALLEN, RICHARD (Hartford City, Virginia), desires information concerning the bibliography of the Stone Age in New Jersey.
- AMERICAN CARBONATE COMPANY (New York City), makes inquiry regarding the occurrence of magnesite in large masses.
- ANDERSON, Dr. JOHN J. (Brooklyn, New York), desires to be informed where photographs of certain ruins in Arizona may be obtained; also as to the origin of the name "Montana" as applied to the Territory.
- ARNETTE, A. R. (Gaylord, Virginia), makes inquiry in reference to the bibliography of Herpetology.
- AUSTIN, W. W. (Palmyra, New York), desires information regarding the publications of the International Congress of Anthropology, held in June, 1888.
- BALDWIN, Miss ANNIE F. (Cincinnati, Ohio), desires to be informed as to the commercial value of certain minerals, and where they may be obtained.

- BANGS, C. (Wolverton, Minnesota), sends sketch of a stone implement concerning which he desires information.
- BARTOW, Miss EMILY (Rock Creek, Wyoming), asks for information concerning the Yellowstone National Park.
- BATEMAN, GEORGE W. (Cincinnati, Ohio), makes inquiry regarding the bibliography of African exploration.
- BELELING, A. H. (Florence, Alabama), desires a determination of a fossil plant from a description of the same which he sends.
- BENEDICT, W. H. (Port Henry, New York), desires information regarding crustacean tracks in Potsdam sandstone.
- BENZON, HANS (Indianapolis, Indiana), desires to know where he may sell to the best advantage a collection of bird eggs, also an opinion as to the value of the same.
- BIBB, W. C. (Montgomery, Alabama), seeks information concerning the technology of petroleum and the petroleum products.
- BLACKMAR, F. W. (Johns Hopkins University, Baltimore, Maryland), desires reference to a book treating of the scope and finances of the Smithsonian Institution.
- BLANKSHIP, J. W. (Drury College, Springfield, Missouri), seeks information regarding mounds and "Mound Builders."
- BODECKER, J. K. (Williamsport, Pennsylvania), makes certain inquiries concerning Government publications.
- BORS, CHRISTIAN (Royal Swedish and Norwegian Consulate, New York City), inquires where skins of the Musk Ox may be obtained.
- BOURNE, GEORGE S. (South Hutchinson, Kansas), seeks information in reference to mushrooms.
- BOYER, H. S. (Sunbury, Pennsylvania), desires information regarding a two-headed snake.
- BROWN, C. A. (Honolulu, Hawaiian Islands), desires reference to an account of a species of mullet occurring in the Gulf of Mexico; also sends photograph of a fish for determination of the species.
- BROWN, Rev. H. M. (East Aurora, New York), desires information regarding a coin, an electrotype copy of which he sends.
- BROWN, M. E. (Orange, New Jersey), makes inquiries regarding musical instruments.
- BROWNE, F. C. (Framingham, Massachusetts), desires information concerning a prehistoric stone implement, a plaster cast of which he sends.
- BRUMBAUGH, G. M. (Normal College, Huntingdon, Pennsylvania), makes inquiry concerning cases and boxes used in the Museum for the display of mineralogical collections.
- BUGBEE, EDWARD B. (Los Angeles, California), desires reference to a work on Ornithology that will assist him in determining the birds of his locality.
- BURROWS, D. B. (Malvern, Arkansas), asks the title of a publication relating to the birds of Arkansas.
- BURT, R. C. (Chatham, Ontario), makes inquiries concerning Government publications.
- BUTTON, Miss SUSAN S. (Litchfield, Ohio), seeks information regarding the value of coins and other currency.
- CALLENDER, ALEXANDER (Eureka, Illinois), desires information concerning a coin, a description of which he sends.
- CANTWELL, Lieut. JOHN O. (U. S. Revenue Marine Service), makes inquiry regarding the composition of certain specimens of supposed jade.
- CHAMBERS, WARREN (Chicago, Illinois), asks questions regarding the longevity of toads and as to the credibility of accounts of their having been found alive incased in solid rock.
- CHITTENDEN, C. E. (Scranton, Pennsylvania), asks an opinion as to the use of a stone implement, a sketch of which he transmits.

- CHRISTIAN, THOMAS (Richmond, Virginia), makes inquiry as to the most effectual method of arranging arrow-heads for purposes of exhibition.
- CLARKE, T. D. (Seattle, Washington), asks for information regarding the cultivation of oysters.
- COCKERELL, THEODORE D. A. (West Cliff, Colorado), sends an impression of markings upon a knife found near West Cliff, with a request that they be deciphered.
- COOPER, B., Jr. (Wheeling, West Virginia), desires information regarding a colonial note, a description of which he sends.
- COOPER, BARKLEY (Wheeling, West Virginia), desires information concerning organization of Museum work in connection with the Smithsonian Institution.
- COWLES, Rev. SYLVESTER (Randolph, New York), asks information concerning a stone implement, a sketch of which he transmits.
- COX, PHILIP (Newcastle, New Brunswick), makes inquiry as to the most effectual method of collecting and preserving fish, and concerning the bibliography of Ichthyology.
- CURTIN, PATRICK (Grangeville, Idaho), seeks information regarding certain impressions on rocks, a description of which he sends.
- DAVIS, J. A. (Eureka, Illinois), desires information regarding a coin, a photograph of which he transmits.
- DECKER & BONITZ (Philadelphia, Pennsylvania) desire to be informed where pure gypsum may be obtained in large quantities.
- DENISON, H. R. (Platteville, Wisconsin), desires information regarding a stone implement, a photograph of which he sends.
- DEVULT, J. J. (Seattle, Washington), transmits a coin for determination.
- DEVRON, Dr. G. (New Orleans, Louisiana), desires a translation of an inscription on a tombstone, a photograph of which he transmits.
- DOBLE, ARTHUR (Toronto, Canada), desires reference to a book relating to Alaska.
- DODGE, CHARLES K. (Port Huron, New York), desires reference to some work on the grasses and sedges of the United States.
- DRESSER, WILLIAM (Santa Ana, California), desires information regarding the phenomena of putrefaction.
- DUMBLE, Dr. E. T. (Austin, Texas), desires information as to the cost of cases used for exhibition and storage purposes in the Museum.
- DUNN, W. S. (Washington, District of Columbia), inquires as to the rapidity of growth in turtles.
- DYER, Lieut. G. L., U. S. Navy (Hydrographic Office, Navy Department), inquires as to the density of water in certain harbors, and as to the surface tension of certain liquids.
- EARLE, EDWARD M. (Malvern P. O., Jamaica), makes inquiry regarding the preservation of fish for purposes of study.
- EDGERTON, Hon. A. P. (Hicksville, Ohio), for D. W. H. Howard, of Winameg, Ohio, makes inquiries regarding prehistoric stone implements.
- EMERSON, Mrs. ELIZABETH (Palma Sola, Florida), desires the determination of a shell from a description which she sends, also an opinion as to its value.
- FAIN, W. J. (Dallas, Georgia), sends description of a stone, and inquires as to the probability of its containing diamonds.
- FOOTE, KATE (Guilford, Connecticut), desires information regarding the looms used by the Indians of Alaska in weaving blankets.
- FRASER, W. LEWIS (Century Company, New York City), makes inquiry regarding the existence of structures analogous to the Irish round towers in the cañons of the western United States.
- FULFORD, R. H. (Cincinnati, Ohio), seeks information regarding the domestication and hybridization of the American bison.
- GALLINAN, GUSTAVE W. (Columbus, Ohio), desires information in reference to cork and pins for mounting insects for purposes of exhibition.

- GARNER, J. P. (Linwood, Maryland), makes inquiry regarding the geological characteristics of Maryland.
- GARNER, R. L. (Norfolk, Virginia), desires information regarding certain archaeological objects in the Museum.
- GIBBS, Dr. MORRIS (Kalamazoo, Michigan), desires information regarding a tooth, a sketch of which he transmits.
- GILFRY, HENRY H. (Washington, District of Columbia), makes inquiries regarding locked elk-horns.
- GNIFFKE, HENRY B. (Florence, Alabama), desires information regarding the production of asphalt in the United States.
- GOINS, ALFORD (Prides P. O., Alabama), desires information regarding rocks, sketches of which he sends.
- GOODE, JAMES S. (Springfield, Ohio), asks for information regarding the cultivation of fish.
- GOODHUE, F. D. (Cincinnati, Ohio), desires information regarding basket work among the American Indians.
- GOULD, A. C. (Boston, Massachusetts), desires certain information regarding fish and game laws in the District of Columbia.
- GRADY, W. C. (Richmond, Virginia), asks for the determination of a bird from a description which he sends.
- GRAVES, W. H. (Kingman, Kansas), desires information regarding the technology of the salt, sugar, paper, and linseed-oil industries.
- GREEN, LOREN W. (Charlestown, New Hampshire), makes inquiry regarding the skinning of small mammals.
- GRINNAN, A. G. (Madison Mills, Virginia), desires the address of some specialist in cryptogamous botany.
- GROW, Mrs. GEORGE (Plainsfield, Wisconsin), makes inquiry regarding the varieties of Asiatic, or so-called "German," carp.
- GUESDE, Mons. L. (Point-a-Pitre, Guadeloupe), inquires where specimens of *Scarabeus hercules* may be obtained.
- HAFELFINGER, FRED. (Washington, District of Columbia), desires information regarding an old guitar in his possession.
- HAYDEN, H. B. (Raton, New Mexico), inquires as to the commercial value of agatized bone.
- HEDRICK, Rev. JOHN T., S. J. (Woodstock College, Howard County, Maryland), desires certain information for his guidance in making exchanges of entomological material.
- HICKMAN, THOMAS (Mount Jackson, Virginia,) desires information regarding a coin, a description of which he sends.
- HIGHT, JAMES L. (Dallas, Georgia), requests an opinion as to the value of a stone implement, which he describes.
- HILL, JOHN W. (Symsonia, Kentucky), requests an opinion as to the value of certain coins.
- HISS, P. H., jr. (Baltimore, Maryland), asks information regarding the preservation of fish for purposes of study.
- HOLMES, Prof. J. A. (University of North Carolina, Chapel Hill, North Carolina), asks what methods have been adopted by the Museum in labeling its exhibition series of minerals.
- HOPKINS, G. F. (Minneapolis, Minnesota), makes inquiry regarding the genealogy of the Hopkins family.
- HOWARD, D. W. H. (Winameg, Ohio), through Hon. A. P. Edgerton, of Hicksville, Ohio, makes inquiries regarding prehistoric stone implements.
- HUL-CEE, Dr. H. J. (Louisville, Kentucky), desires the name of a fish, a description of which he sends.
- HUNT, A. (Knickerbocker Ice Company, Philadelphia, Pennsylvania), desires information regarding asbestos.

- HUTSON, GEORGE (Morganfield, Kentucky), desires information regarding a rock supposed to contain fossil remains, a description of which he sends.
- JACKSON, WILLIAM H. (Pigeon Cove, Massachusetts), sends drawing of a skull, probably of a species of whale, regarding which he desires information.
- JARDIN, E. (Brest, France), makes inquiries regarding the flora of the Arctic regions of America; also in regard to Arctic explorations.
- JARRETT, W. E. (Edwards Station, Kentucky), desires information in regard to a coin, a description of which he sends.
- JOHNSON, H. D. (Collegiate Institute, Strathroy, Ontario), desires information regarding a plant which he describes.
- JUILLERAT, CHARLES E. (New York City), desires an opinion as to the value of a book which he describes.
- KEENEY, HOSIER (Breckenridge, Missouri), desires information regarding the coloring of beverages.
- KELLEY, GEORGE (Santa Ana, California), makes inquiry regarding the Museum system of labeling shells.
- KING, Rev. JOSEPH E., D. D. (Fort Edward, New York), desires information regarding fish-culture.
- KNOX, JOSEPH J. (Philadelphia, Pennsylvania), desires information regarding an albino bird which he describes.
- KOHLER, A. (Elgin, Illinois), makes inquiries in regard to the bibliography of Entomology.
- KONOPAK, C. R. (Toledo, Ohio), makes inquiry regarding the value of certain paper currency.
- KUEBEL, S. S. (Philadelphia, Pennsylvania), desires certain information in regard to lubricating oils.
- KURTZ, WILLIAM C. (Harrisburg, Pennsylvania), inquires as to the value of certain mementos, examples of the so-called "Washington buttons."
- LAIRD, Hon. JAMES (United States House of Representatives), desires information in regard to certain guns exhibited in the Museum.
- LERCH, Dr. OTTO (San Angelo, Texas), desires to know if the Smithsonian Institution will identify certain material for him.
- LESTER, Mrs. EULALIA (Kinsley, Kansas), desires information in regard to the flora of western Kansas.
- LESTER, J. ERASTUS (Providence, Rhode Island), desires the address of some reliable antiquarian book-seller in Washington.
- LIMBERGER, W. B. (Randolph, New York), requests a description of certain bird eggs, to aid him in the determination of some specimens.
- LISMAN, Dr. W. A. (Carlisle, Indiana), asks information regarding a metal ring said to have been found embedded in a block of bituminous coal.
- LOGAN, Rev. JOHN A. (Acadia Mines, Nova Scotia), makes inquiries in regard to the mythology of the aborigines of North America.
- LOSIER, JOSEPH J. (Fulton, Kentucky), requests information as to the best methods of collecting and preserving natural history objects.
- LOWNDES, W. C. (Baltimore, Maryland), requests an opinion as to the value of a medal which he describes.
- LUCAS, F. A. (Trenton, New Jersey), desires certain information regarding snakes.
- LUNAN, J. H. (Terre Haute, Indiana), desires to know if a reward has been offered for a practical method of welding copper.
- LYNN, J. C. (Kearney, Nebraska), describes certain bones concerning which he desires information.
- MCLAIN BROTHERS (Wheeling, West Virginia) desire a determination of a reptile which they describe.
- MANN, B. PICKMAN (Washington, District of Columbia), desires certain information in reference to mollusca of the genus *Psyche*.

- MASTERS, MARK (Gibbon, Nebraska), requests certain information regarding the Incas of Peru.
- MATHESON, WILLIAM J., & Co. (New York City), desire the determination of a snake from a description sent.
- MAYO, GEORGE W. (Richmond, Virginia), requests certain data in regard to zoological gardens in the United States.
- MEIGS, General M. C., U. S. Army (Washington, District of Columbia), requests an opinion as to the genuineness of a whistle, supposed to have been taken from an Indian mound near Columbus, Georgia.
- MILLER, C. B. (Prescott, Arizona), requests certain information regarding vanadinate of lead.
- MILLS, Hon. R. Q. (United States House of Representatives), requests information regarding a colonial note of the State of Maryland.
- MILLS, W. C. (Newcomerstown, Ohio), desires information regarding aboriginal sculpture in America.
- MONROE, J. P. (Ringgold, Tennessee), sends sketch of a chain said to have been taken from an Indian mound, and requests an opinion as to its genuineness.
- MOORE, C. R. (Birdsnest P. O., Virginia), desires information regarding the publications of the Smithsonian Institution relating to prehistoric anthropology.
- MORTON, Mrs. ELIZA H. (Portland, Maine), makes inquiry regarding the government of Alaska; also regarding the "American Geographical Society."
- MURFIT, A. C., jr. (Red Bank, New Jersey), requests certain information regarding a coin.
- MYER, Mrs. A. B. (Newportville, Pennsylvania), desires information as to the rights of a discoverer of mineral wealth on lands other than his own.
- NORTHROP, GEORGE J. (Marquette, Michigan), makes inquiry as to the occurrence of intestinal worms in fish.
- O'HARE, DANIEL (Washington, District of Columbia), incloses a copper coin concerning which he desires information.
- OLIVER, CHARLES (Under Secretary, Department of Lands, New South Wales), makes inquiry regarding the existence of epidemics among wild rabbits in the Northwestern United States.
- OSTRANDER, CHARLES F. (Rye, New York), makes inquiry regarding the ravages of insects on elm and on apple trees; also as to the best liquid for the preservation of insects for purposes of study.
- PARSONS, FRANCIS H. (U. S. Coast and Geodetic Survey), asks for information regarding an Indian mound.
- PHILLIPS, BARNET (Brooklyn, New York), desires information regarding the occurrence of luminous beetles in the vicinity of New York City.
- PHILLIPS, Miss E. J. (Chagrin Falls, Ohio), desires information regarding publications of the Museum.
- PIERCE, THOMAS H. B. (Dexter, Maine), makes inquiry regarding Indian mounds.
- PILLING, J. C. (Washington, District of Columbia), desires information regarding the internal administration of the Smithsonian Institution.
- PLEAS, E. (Dunreith, Indiana), desires information regarding prehistoric stone implements; also in reference to the bibliography of the Mollusca.
- RAGSDALE, G. H. (Gainesville, Texas), desires information regarding the coloration of certain species of *Aucistrodon*; as to the depth to which meteorites usually penetrate; and regarding the superstitions in connection with the so-called "mad-stone."
- RANSON, ROBERT (Canaveral, Florida), inquires as to the proper method of making plaster casts; and desires to know if sharks are viviparous.
- REYMERSHOFFER'S SONS, J. (Galveston, Texas), transmit an analysis of the water from their artesian well and desire an opinion as to its suitability for refining sugar.

- RICHARDS, President J. HAVENS (University of Georgetown, District of Columbia), makes inquiry regarding the form of cases in use in the Museum.
- RICKERTSON, F. A. (Allen, Michigan), makes inquiry regarding mounds and "mound-builders."
- RILEY, A. T. (Santa Monica, California), desires information regarding supposed bones, a description of which he sends.
- RITCHIE, W. W. (Punta Gorda, Florida), makes certain inquiries in regard to the removal of the remains of Washington.
- ROBERT, Dr. T. (St. Charles, Iowa), wishes an identification of a coral which he transmits.
- ROGAN, JAMES W. (Rogersville, Tennessee), asks for information regarding certain rocks which he describes.
- ROMAIN, CHARLES E. (Crockett, Texas), desires information regarding the Marsupialia.
- ROMERO, SENOR DON MATIAS (Mexican Legation, Washington, District of Columbia), desires information regarding a plant, a description of which he sends.
- ROUSER, GEORGE A. (Georgetown, Texas), desires information regarding a coin and a Colonial note in his possession; also regarding the dating of coins.
- ROWLANDS, WALTER (Boston, Massachusetts), makes inquiry regarding works of art in the Museum.
- RUNNALLS, Dr. H. B. (Arkansas City, Kansas), desires information regarding the bibliography of Ornithology.
- RUST, H. N. (South Pasadena, California), desires information regarding the manner of grooving stone implements.
- SAVAGE, JOHN W. (Philadelphia, Pennsylvania), desires to know what kind of wood is best adapted to the manufacture of spools.
- SAVAGE, M. F. (New York City), wishes to know where Santa Barbara arrowheads may be obtained in exchange.
- SAWYER, C. M. (Mechanics Falls, Maine), asks for name of some work on the birds of New England.
- SCHEEL, WILLIAM H. (New York City), desires information regarding mineral rubber.
- SHARP, CLARENCE S. (National City, California), makes inquiry regarding the bibliography of Ornithology.
- SHEM WELL, R. L. (Oak Level, Kentucky), asks the value of certain old coins which he describes.
- SKINNER, E. S. (Lake Forest, Illinois), desires information regarding mermaids.
- SLEVIN, T. E. (San Francisco, California), makes inquiry regarding certain papers published by the Smithsonian Institution.
- SLOUGH, Rev. J. S. (Pioneer, Ohio), desires information regarding stone implements, sketches of which he sends.
- SMITH, J. T. (Hazelhurst, Georgia), desires information in regard to a reputed antidote for snake-bite.
- SMITH, L. H. (Strathroy, Ontario), transmits a plant for determination.
- SPEEL, FRED. (Philadelphia, Pennsylvania), desires an identification of a fish from a description which he sends.
- SPRAY, SAMUEL J. (Salida, Colorado), wants reference to a book on the birds of North America; also to know where he may sell to the best advantage certain mammal skins.
- SPRINGER, Mrs. R. M. (Forest City, Dakota), desires information regarding certain impressions in limestone, a description of which is sent.
- STERNS, FREDERICK & CO. (Detroit, Michigan), makes inquiry regarding the chemical composition and therapeutic uses of *Cascara amarga*.
- STEPHENS F. V. (Marco, Florida), makes inquiry regarding the occurrence of the crocodile in Florida.
- STIZENBERGER, Dr. ERNST (Konstanz, Germany), desires information regarding the distribution of lichens.



- STONE, DR. SOLON B., U. S. Army (Fort Shaw, Montana), makes inquiry regarding the formation of septa in native carbonate of iron.
- STONEBRAKER, JOSEPH R. (Baltimore, Maryland), desires information regarding fish-culture, and the construction of fish-weirs.
- STUENCK, RUDOLF (Goldendale, Washington), desires to be informed as to the best means of preventing the ravages of certain insects, specimens of which he transmits.
- SUCHETET, M. A. (Bréanté, Seine-Inférieure, France), makes inquiry regarding a directory of American naturalists.
- TANNER, W. W. (Worcester, Massachusetts), makes inquiry regarding the bibliography of Indian dialects.
- TAPPEY, E. P. (Bridgeton, New Jersey), desires directions for the preparation of whitewash such as is used on light-houses in the United States.
- TEED, C. F. (Elmira, New York), desires information regarding a slate implement, a description of which he sends.
- TEETOR, HENRY DUDLEY (Public Library, Cincinnati, Ohio), makes inquiry regarding certain astronomical instruments; also in reference to a portrait of the Indian chief "Little Turtle."
- TILFORD, H. J. (Louisville, Kentucky), desires information regarding a petrified oyster, a description of which he sends.
- TODD, JOHN F. (Gove City, Kansas), desires an opinion as to the probability of minerals being found on certain lands which he describes.
- VAISZ, ARANKA (Buda-Pesth, Hungary), asks general questions regarding entomological matters in the United States.
- VAN ANTWERP, BRAGG & CO. (Cincinnati, Ohio), desires information regarding analyses of foods.
- VANCE, Hon. ROBERT B. (Washington, District of Columbia), makes inquiry regarding a mint token, a medal of the "Indian Peace" series.
- VAN HYATT, P. (Fall River, Kansas), desires information regarding fossil plants.
- VOICE, The, Editor of (New York City), desires information regarding the use of spirituous liquors as an antidote for snake-bite.
- WASHINGTON, WILLIAM HERBERT (Bar Harbor, Maine), makes inquiry regarding the dialect of the Passamaquoddy Indians.
- WATTS, B. F. (Lakeland, Kansas), requests information regarding a deposit of graphite.
- WEIDEMEYER, J. W. (New York City), inquires whether the Museum possesses certain photographs and autographs.
- WELSH, W. W. (San Bernardino, California), desires information regarding slabs of stone with characters engraved thereon.
- WERNSE, E. A. (St. Louis, Missouri), makes inquiry regarding the value of certain Egyptian coins.
- WHEELER, Mrs. S. A. P. (Avalon, California), desires reference to a work on the birds of the Pacific coast, especially of California.
- WHITE, JAMES J. (Palm Beach, Florida), desires reference to some comprehensive work on Conchology.
- WHITE, T. ARTHUR (Navasota, Texas), desires information regarding a coin, an impression of which he sends.
- WHITSON, Prof. B. F. (Barnesville, Ohio), desires reference to a work on American birds.
- WILDER, Rev. S. P. (Janesville, Wisconsin), desires information regarding the "buffalo bug," and suggestions as to the best means of preventing its ravages.
- WILLIAMSON, C. W. (Los Angeles, California), desires information regarding Smithsonian publications.
- WINCHELL, Prof. N. H. (Geological and Natural History Survey of Minnesota, Minneapolis, Minnesota), desires to know where a copy of Catlin's painting "The Falls of St. Anthony" may be obtained.

- WISE, WILLIAM F. (Pittsburgh, Pennsylvania), asks for information regarding a supposed fossil which he describes.
- WOOD, J. P. (Valentine, Nebraska), desires information regarding a tooth and a bone which he describes.
- WOODS, Miss EVA H. (Pinckneyville, Kentucky), desires information in regard to a coin, a description of which is sent.
- WRIGHT, Prof. RAMSAY (University of Toronto, Canada), makes inquiry regarding State Museums in the United States.
- YOUNG, M. J. (St. Clair, Missouri), makes inquiries regarding a check-list of the birds of North America.

*Statement of technical letters prepared during the year, arranged geographically.*

Locality.	Number of letters written.	Locality.	Number of letters written.
Alabama .....	4	New Hampshire .....	2
Arizona .....	3	New Mexico .....	4
Arkansas .....	6	New York .....	41
California .....	14	North Carolina .....	5
Colorado .....	10	Ohio .....	20
Connecticut .....	3	Oregon .....	2
Dakota .....	4	Pennsylvania .....	36
District of Columbia .....	37	Rhode Island .....	2
Florida .....	7	South Carolina .....	2
Georgia .....	6	Tennessee .....	13
Idaho .....	2	Texas .....	25
Illinois .....	11	Utah .....	6
Indian Territory .....	1	Vermont .....	2
Indiana .....	4	Virginia .....	29
Iowa .....	6	Washington .....	8
Kansas .....	19	West Virginia .....	16
Kentucky .....	12	Wisconsin .....	5
Louisiana .....	5	Wyoming .....	3
Maine .....	4	Australia .....	1
Maryland .....	10	Canada .....	7
Massachusetts .....	7	Franco .....	2
Michigan .....	9	Germany .....	4
Minnesota .....	5	Hawaiian Islands .....	1
Mississippi .....	2	Hungary .....	1
Missouri .....	12	Mexico .....	1
Montana .....	6	Scotland .....	1
Nebraska .....	5	West Indies .....	2
Nevada .....	1	Total .....	456

One of the reasons for the great increase in this branch of the Museum work is, that the letters addressed to the Smithsonian Institution relating to anthropological and zoological subjects are, almost without exception, referred to the Museum. Letters of this class are received daily from the Secretary, and the majority of the letters in reply are prepared for the Secretary's signature.

The Museum receives a large number of offers to make explorations in various parts of the world, and to collect specimens for the collec-

tions. Thirty-five offers of this kind, each of which necessitates considerable correspondence, have been received during the year, and are briefly shown in the following statement :

MAX BAUDELLOT (261 West Madison street, Chicago, Illinois) offers "to make a study of every subject concerning the history and civilization of the Republic of Honduras."

MISS FAUSTINE BUTLER, A. M. (1620 Rush street, San Francisco, California), desires to make explorations and collect specimens along the Pacific coast from Mexico to Alaska.

Dr. JOHN M. CRAWFORD (registrar of the Pulte Medical College, Cincinnati, Ohio, and now United States consul at St. Petersburg, Russia), has kindly consented to make special ethnological researches in Finland, and to collect specimens, particularly musical instruments.

Mr. J. CRAWFORD (through the Department of State) offers to collect from the Department of Nueva Segovia in Nicaragua, mineralogical and other specimens, and to procure for the Museum such portions of the exhibit made by the Nicaraguan Government at the Paris Exposition as may be desirable.

Mr. JEREMIAH CURTIN (through Maj. J. W. Powell, Bureau of Ethnology) offers to collect ethnological specimens in connection with an expedition to the Hupa Valley.

VINAL N. EDWARDS (Wood's Holl, Massachusetts) offers to collect sea birds.

L. L. FROST (Susanville, California) offers to collect ethnological and archæological specimens.

E. C. GREENWOOD (Brownsville, Texas) offers to collect birds in Texas.

B. M. HAYWARD (Weybridge, Vermont) offers to continue his explorations in northern Mexico, and to collect birds for the Museum.

Dr. A. E. HEIGHWAY (Cincinnati, Ohio) offers to make explorations and collections in Central and South America.

Ensign W. L. HOWARD, U. S. N. (Office of Naval Intelligence) offers to collect in Alaska mammals, fishes, and ethnological objects.

Prof. O. B. JENKINS (De Pauw University, Greencastle, Indiana) offers to collect and present to the Museum a series of fishes from the Hawaiian Islands.

F. M. LAMB (Nestockton, Oregon) offers to collect minerals.

JAMES LISLE (Gordon, Nebraska) offers to collect ethnological specimens.

GEORGE W. MCGLUMPHY, A. B. (professor of Zoology, Botany and Geology at Ozark College, Greenfield, Missouri) offers to make explorations in southwestern Missouri, and to send specimens of the fauna and flora of that section.

E. W. MARTIN (Medina, Ohio) offers to collect bird skins in his vicinity.

C. S. MASON (Engineer's Office, Lake Shore and Michigan Southern Railroad Company, Toledo, Ohio), offers to collect iron ores in his vicinity.

A. J. MILLER (Evansville, Indiana) offers to collect specimens of natural history geology, and archæology in Central America.

S. CLAIR MITCHELL (Dolores, Colorado) offers to continue his explorations in Colorado and Arizona.

SOLON ORR (Melrose, Silver Bow County, Montana) offers to collect specimens from the lava beds of Idaho.

HENRY DU R. PHELAN (11 Van Ness Avenue, San Francisco, California) offers to make general explorations and collections.

Rev. STEPHEN D. PEET (Mendota, Illinois) proposes to make mound explorations in his vicinity.

THOMAS H. B. PIERCE (Dexter, Maine) offers assistance in the exploration of mounds in his vicinity.

- Rev. Fred. H. H. Post (313 Church Street, Salem, Oregon) proposes to make explorations, etc., near Anvik on the Yukon river, Alaska, and to transmit collections to the Museum.
- W. W. ROCKHILL (Peking, China) offers to secure ethnological specimens in China and Thibet.
- CHARLES RUBY (acting steward, U. S. Army, Fort Assiniboine, Montana Territory) offers to collect specimens of birds and mammals in his vicinity.
- EDWIN RUSS offers to make collections in southwestern Oregon.
- Prof. ISRAEL C. RUSSEL (U. S. Geological Survey) offers to make collections in Alaska of zoological, botanical, and ethnological specimens.
- JAMES A. SINGLEY (Giddings, Texas) informs the Smithsonian Institution of his intention to spend the spring months in southwestern Texas, for the purpose of collecting shells, birds, and eggs.
- II. L. SCAVLEM (176 Prospect Avenue, Janesville, Wis.) offers to collect mammals in the vicinity of Janesville.
- VIX SMITH (Lyon Post-office, Madison County, Montana) offers to collect specimens of living animals for the National Zoological Park.
- Dr. JOHN SUNBERG (405 Montgomery street, San Francisco) desires to act as agent of the Smithsonian Institution for the purpose of collecting specimens in the regions of the Persian Gulf, and the Euphrates Valley.
- Lieut. E. H. TAUNT, U. S. Navy (909 Sixteenth street northwest, Washington, District of Columbia) offers to continue his work of collecting material for the Museum in the Congo Valley, South Africa.
- TALCOTT WILLIAMS (1833 Spruce street, Philadelphia, Pennsylvania) informs the Smithsonian Institution of his proposed trip to Morocco, and offers to make scientific researches in botany, geology, and ethnology.

It has been found impracticable to accept several of these offers. Among those which have been accepted, and which have resulted most favorably to the Museum, may be mentioned the explorations of Mr. Talcott Williams, Dr. John M. Crawford, Mr. Jeremiah Curtin, Mr. W. W. Rockhill, Prof. I. C. Russell, and Lieut. E. H. Taunt.

Special reference to the results of their work is made under the head of "Exploration."

A special feature of the routine work of this department is the method of indexing letters written. A card has been prepared on which is written the name and address of each correspondent, together with the number of the letter-books and pages in which all letters to a given person have been copied, including the date of each letter. By this means can be ascertained at a glance the amount of correspondence with any person. This has been found exceedingly convenient. More than five thousand of these cards have been filled up during the year relating to letters written since 1887. These cards are arranged alphabetically and kept in long boxes divided into compartments, one or more of which are devoted, as required, to a single letter of the alphabet. Cross references are made under the name of the Government department or private establishment with which the person addressed may be connected. For instance, all letters written to any official in the Treasury Department are recorded on cards headed "Treasury Department," and another card is filed under the name of the person addressed. This is particularly convenient in the case of the Government departments where changes of officials are more or less frequently occurring.

The principal records kept in this department may be classified under the following headings :

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|--|---|
| 1. Card index of letters written.                    | 6. Museum record of events of special moment. |
| 2. Index of letter-books.                            | 7. Index of applications for scientific work. |
| 3. Offers for sale, gift, and exchange of specimens. | 8. Requisitions for publications.             |
| 4. Offers for collection and exploration.            | 9. List of publications promised when issued. |
| 5. Index of requests for information.                |   |

In this office is prepared for publication in the annual report (as Section V) a complete list of accessions to the Museum during the year. This is now arranged alphabetically under the name of the sender. Two indexes are furnished; the one by Museum departments showing at a glance the number of accessions to each department during the year; the other by locality, indicating what material has been received from each locality both in this and in foreign countries.

A similar list with corresponding indexes is prepared of the material submitted for examination and report. This is published in another part of the annual report.

The bibliography of papers published during the year by the officers and collaborators of the Museum is prepared in this office and forms Section IV of the annual report.

The data required for the preparation of Section I of the annual report is compiled in this office.

In addition, the general preparation of the annual report, as well as the supervision of the proof, has also been made a part of the work of this office.

#### PREPARATION OF LABELS.

There were received from the Government Printing Office 3,188 forms of labels, classified as follows:

Materia medica.....	741	Oriental antiquities .....	182
Metallurgical .....	842	Botanical .....	267
Birds .....	615	Living animals.....	19
Foods and textiles.....	111	Archaeological.....	5
Mammals .....	79		
Ethnological .....	206	Total .....	3,188
Building stones .....	121		

Of each form, twelve copies are printed on proof paper for catalogue purposes and twelve copies on colored board. This gives the total number of copies of labels printed, 96,512.

In addition to this there have been printed on the small press at the National Museum 803 forms of labels, classified as follows:

Materia medica.....	3	Transportation .....	21
Foods and textiles .....	2	Mollusca .....	39
Mammals .....	246	Forestry .....	7
Ethnological .....	145	Graphic Arts .....	135
Building stones .....	166		
Oriental antiquities .....	19	Total .....	803
Living animals .....	20		

This places the total number of label forms printed for the National Museum during the year at 3,991.

#### BUILDINGS AND LABOR.—POLICE AND PUBLIC COMFORT.

The staff employed for police and inspection has remained under the charge of Henry Horan, superintendent of buildings.

From the reports of the superintendent are quoted in brief the following statements, which will serve to show in part the character of the work accomplished by the laboring force during the year :

#### 1888.

*July.*—During the first part of the month the mechanics and laborers were occupied in making preparations for the shipment of exhibits to the Cincinnati Exposition, which were finally shipped in twelve car-loads. Later in the month twenty-two boxes, containing the photographic exhibit, were forwarded by freight. This completed the work of packing and shipping the exhibit from the Smithsonian Institution.

On July 9, the work of preparing material, packing and shipping an exhibit to the Marietta exposition was begun. This was completed on July 14.

On July 16, additional mechanics and laborers, who had been hired for work in connection with the Cincinnati exposition, were discharged. In order to afford better light in the main hall of the Smithsonian building, one end of each of the galleries was cut off. The fence inclosing the buffalo yard was painted. New steps were made and placed in the annex east entrance leading to the basement.

Storage-cases for specimens were built for the Department of Ethnology; two card-catalogue boxes for the executive clerk's office, and two cases for the metallurgical department.

*August.*—Scaffolding was erected in the main hall of the Smithsonian building to facilitate the preparation of the walls and ceiling for painting. The painting of the exhibition hall of the Department of Fishes was finished. In the carpenter and paint shops, the following work has been completed: Construction of one large storage-case for unit trays, one frame for mounting tiles, cutting and fitting glass for cable-frames, putting mahogany casing around plaster casts; making pedestals for the department of mammals; construction of two large tubs for holding trees in the rotunda. New mahogany label-frames were made. Mahogany panel ends have been put in four door-screen cases in the department of lithology.

The alteration of the galleries in the main hall of the Smithsonian building has been continued this month.

The following work has also been completed: Putting new floor in the café; shelving and painting wall cases; extending wall-cases and polishing specimen blocks for the department of comparative anatomy; repairing broken cases and making frames for the department of ethnology. For the executive clerk's office there has been made one case of drawers with shelving, and one case for letter-books. The refitting of doors to cases in several departments has been continued from day to day.

*September.*—Several repairs in different parts of the Museum building and in the Armory building were rendered necessary by the results of a severe storm which occurred on September 10. The cases formerly occupying the wall space at the south entrance of the Smithsonian building, were removed to the northeast court of the Museum building. A great many blocks for specimens have been painted and ebonized for the various departments, and the work of fitting shelves to cases has been continued.

The platform in the lecture room has been repaired, and a large book-case made for the Department of Buildings and Labor. Five pier upright cases have been remodeled for the Department of Ethnology, and several catalogue boxes have been made for the executive clerk's office. Oak frames for transparencies have been made. The office of the engineer of property has been furnished with a brass wire screen. The extension and remodeling of the bird cases still continue.

*October.*—The stained glass in the circle over the south entrance of the Smithsonian building has been removed and replaced with plain glass. The radiators in the southeast court were removed from the walls to make room for wall cases, and were placed further back towards the center of the hall. This work necessitated some excavating in connection with the fitting of the steam-pipes. A new shed was built for the collection of living turtles and other specimens. Repairs were made to the floor in the southeast court. One of the upper rooms of the north tower in the Smith-

sonian building has been assigned to the Department of Mollusks, and shelving has been erected therein for the storage of trays, etc., belonging to that department. The halls and galleries in the Smithsonian building have been scoured and cleaned, and the furniture placed in order after the confusion incident to the painting of the walls. The mechanics have also been occupied on the following work: making five hundred blocks for the exhibition of medals; making frames for Assyrian slabs, and mahogany shelves for the Department of Mammals; remodeling pier cases, and fitting them with shelves; fitting drawers and locks to cases; making drawers for storage cases; fitting mahogany table tops to wooden pedestals; constructing a platform for the steam-steering machine in the Department of Transportation and Engineering; making one case of pigeon-holes for the section of fisheries; fitting shelves to a chart case; beveling one thousand blocks for the Department of Minerals; making a desk and case of pigeon-holes for the registrar's office; making frames for plaster casts; painting the window frames of the Museum building; painting walls in the lecture room; kalsomining the east front of the annex building; ebonizing blocks for the Department of Minerals.

*November.*—Early in the month the Superintendent left Washington with six skilled laborers for Cincinnati for the purpose of packing and returning to the Museum the exhibits and cases sent to the Exposition. A force of men has been engaged in cleaning out the sheds at the Armory and re-arranging the vast amount of material there stored. The tender belonging to the engine "John Bull" was brought over from the Armory and placed at the east entrance of the Museum building. The lecture hall was cleared to make room for the return of the exhibits from Cincinnati, which began to arrive on the 26th. On December 15, all this material was safely housed, and the superintendent with his men returned to their duties in the Museum. The work of unpacking and returning the exhibits to their proper departments occupied the time of the entire laboring force for many days. After most of the above work was completed, the Graphic Art exhibit, recently returned from Cincinnati, was installed in the lecture hall. During the latter part of this month many of the cases in the Anthropological hall were re-arranged. The carpenters completed remodeling pier cases for use in the Department of Arts and Industries. The following work was also accomplished: One book-case, with shelves, was made for the Department of Botany; changing doors in unit tables in the Department of Botany; making two oak book-cases for the Executive Department; constructing pigeon-holes for the Department of Building Stones; also counter, drawers, and pigeon-holes for the office of the engineer of property; adjusting locks and doors in floor cases in the southwest hall. The painters have been engaged in covering and painting diaphragms, lettering screens, and varnishing picture frames; painting tubs for plants in the rotunda; painting the walls of the public comfort room; glazing windows in the Smithsonian and Museum buildings; painting walls over the stairway in the east pavilion; finishing in hard oil a large book-case for the executive clerk's office; painting cases for the Department of Property and Supplies.

*December.*—Ash screens to be placed on the top of the cases in the southwest court have been made. The west hall has been re-arranged and the lecture hall put in order for the meetings of the American Historical Association. Eleven door screen cases have been furnished to the curator of birds. These will take the place of the old white cases in the center of the hall, which will be condemned as soon as the specimens have been removed. The old storm door at the north entrance to the Museum building has been removed to the east entrance, and larger and more serviceable ones have been placed at the north entrance. The following work has also been accomplished: Construction of base for statues; painting trays; repairing Japanese clock; construction of card catalogue shelves for cases; putting strips in case for medals; painting bases; making two large walnut bases; setting glass in the antelope case, and finishing and shellacing pedestals; painting pedestals and putting locks on cases in the Department of Botany. The fence around a part of the Armory building has been repaired and the sash glazed and painted. The windows and screens in the lecture hall have been glazed and painted. For the Department of Ethnology a large oak frame for a map of Asia has been made. A Kensington case has been polished; frames for plaster casts have been made; a skeleton frame for the west hall has been constructed; four boxes have been made for the library; cases for the models of the Zoological Park have been made, and a card catalogue case was constructed for the office of the engineer of property. The work on the bird cases in the Smithsonian building still continues. The upright cases have been extended back as far as the wall.

1889.

*January.*—The work of constructing an additional room for the entomological laboratory over the ladies' reception room was begun the latter part of December. This work was continued during this month and completed in the early part of February. For the Department of Prehistoric Anthropology a number of wing frames have been

glazed and trays painted. Several cases in the exhibition hall of this Department have been painted, and ten mahogany table frames have been made for the various sections in the Department of Arts and Industries. Trays have been repaired and label frames made for the Department of Botany. A large number of wooden blocks have been ebonized, one book-case made, and one case altered in some of its details. For the Department of Lithology mahogany table frames have been made and wing frames glazed. The old storm doors have been placed at the east entrance. The walls on the stairway leading to the basement of the Smithsonian building have been painted. The floor in the ladies' retiring room has been repaired. The walls at the north entrance to the Smithsonian building have been painted. Cases have been painted and glazed for the Department of Anatomy. The floor in one alcove case in the Department of Ethnology was lowered. Frames for maps were made. For the Department of Engineering a case with sliding drawers has been made. Boxes for copper tanks were made for the Department of Fishes. A base for a memorial stone transmitted by the Washington Monument Commission was made. In the Department of Insects a sky-light was made. The floor and wall cases in the Department of Metallurgy were painted, and several shelves fitted. Frames for glass to cover models, and storage cases for use in the south west pavilion were made. For the Department of Mesozoic Fossils several slope-top cases and frames were made and drawers fitted to the cases. A number of blocks were ebonized for the Department of Minerals. The alteration of the old doors and hanging new doors to bird cases was attended to. A large number of picture frames were painted and cleaned. Frames for maps were made. Glass was put in bird cases, and the inside and outside of the cases were painted. For the Department of Paleozoic Fossils a number of shelves were painted.

*February.*—The removal of the office of the curator of textiles from the third to the second floor was completed, and the office of the curator of naval architecture was removed from the second to the ground floor in the east tower. The removal and re-arrangement of cases stored in the Armory building was completed. A wire fence to inclose the large mineral masses on the west side of the Museum building was constructed. Two skylights were placed in the roof over the entomological laboratory. Painting the walls and ceiling in the ladies' retiring room was begun. The re-arrangement of the cases in the north and west halls has occupied a great deal of time. The skeletons of whales, one of which was returned from the Cincinnati Exposition, have been hung in the osteological hall. Other work accomplished this month is as follows: Several shelves for wall cases were made, and two hundred and forty-seven trays painted for use in the anthropological hall. Bases for the walrus and sea-lion were made for the Department of Mammals. An iron bracket for the whale skeleton in the Department of Comparative Anatomy was painted. For the Department of Ethnology several screens and cases were painted. A base was made for the Japanese Buddha, a slope base for Assyrian slabs, and one for totem posts were made. Glass for label frames for the Engineer of Property was cut. A base for four ash screens for the exhibition of a collection of busts was made. A wall case in the entomological laboratory was constructed. Several screens to be placed at the entrance to exhibition halls, and screens and shelves to go behind and over radiators were made. Glass was put in bird cases in the main hall of the Smithsonian building. Diaphragms and strips were made and placed in door-screen cases, and a number of cases were painted. For the Department of Paleozoic Fossils four boxes were made and a desk repainted.

*March.*—During the early part of this month almost the entire force was required to remain after the regular hours in order to complete the re-arrangement of cases in the exhibition halls. On March 2, eight of the force were sworn in as special policemen, this being thought advisable for the better protection of the collections during the inauguration season. Several of the laborers, carpenters, and painters were required to do duty as watchmen on this occasion. The arrangement of the Lorillard collection of casts, recently removed to the Smithsonian building was begun. This work occupied a considerable force of laborers for several days. In the Department of Ethnology a base with high back to accommodate plaster casts was made. Sample drawers for unit cases were made. Label frames were made for the Department of Botany, and a platform placed over the stairway in the south balcony. In the Department of building stones a number of partitions were placed in paper boxes, and a file case and drawers made to hold them. The wall in the north hall of the National Museum was painted. The collection of Mexican casts was moved from the Museum building to the Smithsonian building. The interior of the long wall case in the southeast range was painted, the wall case was glazed and label frames made. Locks were put on cases and doors for the Department of Ethnology. Two sample unit drawers were made and partitions put in drawers in the Executive Department. Stretchers were made for some of the Washington relics. For the Department of Marine Invertebrates locks and keepers were put on a book-case. The cases in the hallway of the northwest pavilion were painted. Locks were fitted to doors and cases in the Department of Metallurgy. Piers and frames were painted, and several cases glazed. A



small case was made for the Department of Birds, and the inside and outside of several cases in the bird hall were painted. Shelves to slope cases were made for the Department of Paleozoic Fossils.

*April.*—The ledges of a large number of windows were lined with tin to prevent the rain from beating in. In the Department of Antiquities, pedestals and shelves were constructed and two hundred thirty-seven trays were painted. Locks were put on cases in the Department of Mammals. One end of the wall case in the south hall was made moth proof. A tin collecting case was made for use in the Department of Botany. Locks were put on chart cases in the Department of Building Stones. For the Department of Buildings and Labor a mail box was made for the Superintendent's office. The walls in the northwest pavilion and in the lecture hall were painted. The third floor of the northwest pavilion was fitted up for the offices of the executive clerk. Glass was reset in a case for the Department of Anatomy. In the Department of Ethnology packing boxes were made, and mahogany tables for specimens of Japanese lacquer were constructed. Shelving was constructed around a portion of the executive clerk's office. Two copper tanks were made for the engineer of property. Locks were fitted to several unit cases. Blocks were ebonized for the display of food specimens. A base and screen for an exhibit of woods was made. In the section of Historical Relics a frame was made for a portrait of Washington. A number of screens in the Department of Metallurgy were strengthened and painted. For the Department of Minerals two tanks were made, a number of blocks ebonized, casters put on ten unit-table cases, and doors and trays eased. A number of blocks were painted for the section of Materia Medica. For the Department of Ornithology tanks boxes were made; the inside of cases in the bird hall were painted, and a small mahogany case made for a group of birds. Several floor cases were fitted up, and old book-cases repaired. For the Section of Graphic Arts 36 double boxes were finished.

*May.*—The northwest basement has been thoroughly cleaned, and several coats of whitewash have been put on the walls. Awnings have been fitted to the windows in both buildings. For the collection of Animal Products a storage case was built; this holds about one hundred and fifty trays. Case drawers and trays have been planed and eased. In the Department of Antiquities casters were put on a large walnut case; fifteen heavy bases made. Wing frames for use in the Section of Oriental Antiquities were repaired, four pedestals cut down, and the inside of cases painted. For the Department of Mammals a stand for porpoise casts was made, and casters were put on unit table cases. The prairie-dog and elephant cases were glazed and the bases of table cases made moth-proof. One hundred and seventy-six trays were made for the Department of Botany. A number of relief maps were lettered for the Department of Building Stones. The sky-lights in the carpenter's shop and leaks in the roof were repaired. Twelve label-frames were made and sectional covering put on steam-pipe in the exhibition hall of the Department of Comparative Anatomy. Six pine shelves for storage were made, and several pamphlet boxes repaired. Twelve copper tanks and twenty tin insect-boxes were made for the Engineer of Property. Twenty drawers were fitted to storage cases in the Department of Metallurgy. Casters were put on two unit cases in the Department of Minerals, and a number of wooden blocks for specimens were planed. Three sliding screen cases in the Section of Materia Medica were reduced to half their original thickness. Door screen cases were glazed. Cases in the exhibition hall of the Department of Birds were painted, and shelving and floor cases fitted up in the south tower of the Smithsonian building. Drawers and locks were fitted on two unit cases, and one box made for the Department of Birds' Eggs. For the Section of Textiles three label-frames were made, one hundred blocks painted, and one hundred and forty-two trays eased. In the Department of Ethnology casters were put on ten mahogany cases, one map lettered, and twenty-seven trays eased.

*June.*—The basement rooms under the north entrance have been thoroughly cleaned.

On June 6, four extra laborers were engaged to help in clearing the storage rooms at the Armory building for the use of the Fish Commission. This occupied the time of six to eight laborers for many days.

The installation of the collection of prints and engraving has occupied the time of several carpenters, painters, and laborers. A window was cut in the wall in the third floor of the northwest pavilion. The east window in the second floor of the natural history laboratory was enlarged. The painting of exhibition cases, shelves, drawers, and trays in the halls of the Department of Birds and Prehistoric Anthropology has continued from month to month, owing to many changes in the original plans. Shelving was placed in the shed in the Armory building, and doors and trays to cases eased in the Department of Building Stones. Repairs were made in the roof of the Museum building. The walls and stairway at the north front of the Smithsonian building were painted. The roof of this building was repaired. Nineteen French ventilators were painted. Two hundred and six trays were eased and three lights of glass 60x90 inches were fitted in slope cases for the Department of Ethnology.

Eighty-five trays were eased for use in the Department of Metallurgy. Three old sliding screen cases were changed into three door screen cases for the Section of Materia Medica.

In the Department of Birds the interiors of several cases were painted light buff, thirty-two new shelves for mahogany floor cases were fitted up, and locks were put on unit cases. In the Department of Paleozoic Fossils thirty-nine trays and two hundred and thirty-one new drawers to unit table cases were eased. A large number of shelves for cases were repaired for the Section of Textiles.

#### THE WORK OF THE MUSEUM PREPARATORS.

The preparation of specimens for exhibition in the Museum and for the study series has been satisfactorily continued. The work of modeling is in charge of Mr. W. T. Hornaday, chief taxidermist.

#### TAXIDERMISTS AND MODELERS.

The operations of the department in preparing groups of mammals have been greatly hampered by the vast amount of other necessary routine work, but considerable progress has been made with several groups which it is expected will be completed during the coming year.

These groups are:

*Gray Squirrels.*—Part of this group was completed for the Cincinnati Exposition, but owing to lack of space it was not sent. It has now been decided to increase its size, incorporating in it all that it is possible to exhibit of the life history of the squirrels, thus making it more comprehensive and instructive.

*Red Squirrels.*—What is stated of the gray-squirrel group applies to this group also.

*Red and Gray Foxes.*—Some work has been done on these groups, but more material has yet to be collected.

*Rabbits.*—Material has been collected for this group, and it will be one of the first finished.

*Moose.*—Considerable work has been done on this large and important group. The manikins for three of the six animals of which this group will be composed, have been made, and it is the intention to bring it to completion at an early date. The group will occupy a special case of the same dimensions as that containing the group of buffaloes.

In addition to the work mentioned above, a portion of the necessary materials for several other groups have been collected and designs drawn. These groups will include the Rocky Mountain Goat, Rocky Mountain Sheep, Musk-ox, Beaver, Raccoon, and Woodchuck.

The Opossum and Prairie-Dog groups have been put in their new cases and the Orang-utang group retouched. The Antelope group was sent to the Cincinnati Exposition. When a new case for this group has been made, it is intended to add several specimens of different ages, and to rearrange it for exhibition.

The following is a list of specimens mounted during the year :

<p style="text-align: center;"><i>Primates.</i></p> <p>16166. <i>Semnopithecus siamensis.</i>            16167. <i>Cercocebus athiops.</i>            13499. <i>Jacchus vulgaris.</i>            16170. <i>Lemur flavifrons.</i></p> <p style="text-align: center;"><i>Carnivora.</i></p> <p>16177. <i>Felis minuta.</i>            16176. <i>Felis marmoratus.</i>            16324. <i>Felis domesticus</i> (angora).            16121. <i>Lynx maculatus.</i>            16179. <i>Melivora ratel.</i>            16288. <i>Bassaris astuta.</i>            16238. <i>Urocyon virginianus.</i>            16175. <i>Nandina binotata.</i>            16171. <i>Otogale crassidudata.</i>            16174. <i>Hemigulea hardwicki.</i></p> <p style="text-align: center;"><i>Ungulata.</i></p> <p>16075. <i>Cariacus claratus.</i> Male.            16076. <i>Cariacus claratus.</i> Female.</p>	<p style="text-align: center;"><i>Chiroptera.</i></p> <p>13251. <i>Rhinolophus hipposideros.</i></p> <p style="text-align: center;"><i>Rodentia.</i></p> <p>15325. <i>Dasyprocta isthmica.</i>            16228. <i>Lepus campestris.</i>            16359. <i>Lepus campestris.</i>            16235. <i>Mus decumanus.</i>            16182. <i>Sciurus macrourus.</i>            16183. <i>Sciurus maximus.</i>            16184. <i>Sciurus punctatissimus.</i>            15980. <i>Sciurus bicolor.</i>            14685. <i>Sciurus niger.</i>            16316. <i>Sciurus hudsonius hudsonius.</i>            14433. <i>Sciurus hudsonius douglassi.</i></p> <p style="text-align: center;"><i>Marsupialia.</i></p> <p>12881. <i>Didelphys myosurus.</i>            16187. <i>Dendrolagus ursinus.</i></p> <p style="text-align: center;"><i>Miscellaneous.</i></p> <p>Three Ptarmigans.            One Crow.</p>
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Sixty fresh specimens of mammals received during the year and fifty alcoholic specimens were skinned and preserved. Of the sixty fresh animals skinned, thirty-three were collected by the taxidermists, fifteen were received from the Department of Living Animals, and twelve from the Mammal Department. Thirty-eight skins were also received, dry and alcoholic. There has been some progress in making up into good dry skins the duplicate material on hand. A beginning has also been made in reducing the number of alcoholic specimens by working them over into dry skins for the reserve collection.

The following statement relates to dry skins which have been made during the year :

Primates .....	7	Edentata .....	2
Carnivora .....	33	Marsupialia .....	4
Ungulata .....	2		—
Chiroptera .....	14	Total .....	174
Rodentia .....	109		

A number of porpoise casts sent to the Cincinnati Exposition having been returned more or less injured, it was decided to put them in good condition, and also to overhaul others on exhibition and in storage. This work has been done almost entirely by Mr. Joseph Palmer and Mr. A. H. Forney. A list of these is as follows, about a dozen remaining to be completed another year :

13342. Common Dolphin ( <i>Delphinus delphis</i> ).	12480. Blackfish ( <i>Globicephalus melas</i> ).
13343. Common Dolphin ( <i>Delphinus delphis</i> ).	12761. Grampus ( <i>Grampus griscus</i> ).
14936. Common Dolphin ( <i>Delphinus delphis</i> ).	12839. Grampus ( <i>Grampus griscus</i> ).
15030. Spotted Dolphin ( <i>Prodelphinus plagiodon</i> ).	13355. Grampus ( <i>Grampus griscus</i> ).
12939. Striped Porpoise ( <i>Lagenorhynchus acutus</i> ).	12302. Common Porpoise ( <i>Phocæna communis</i> ).
12305. Striped Porpoise ( <i>Lagenorhynchus acutus</i> ).	13200. Common Porpoise ( <i>Phocæna communis</i> ).
12306. Striped Porpoise ( <i>Lagenorhynchus acutus</i> ).	13359. Common Porpoise ( <i>Phocæna communis</i> ).
13727. Bottle-nosed Dolphin ( <i>Tursiops tursio</i> ). (2 specimens.)	13428. Common Porpoise ( <i>Phocæna communis</i> ).
15171. Bottle-nosed Dolphin ( <i>Tursiops tursio</i> ). (Young.)	13738. Pygmy Sperm Whale ( <i>Kogia breviceps</i> ).
	14677. Gray Whale ( <i>Rhachianectes glaucus</i> ). (Model.)
	12988. Pacific Right Whale ( <i>Balæna japonica</i> ). (2 models.)

## MISCELLANEOUS WORK OF THE TAXIDERMISTS.

*Collection of domestic animals.*—For many years it has been customary to include in the exhibits of the Mammal and Bird Departments such specimens of domestic animals as may be received. During the past year it has been decided to form a separate collection under the above name, and the various specimens on hand have been brought together, renovated, and exhibited in a large wall case in the Section of Animal Products.

The collection is composed as follows: 6 mammals (llama, sheep, dog, cat, etc.), 31 ducks and geese, 86 domestic fowls; a total of 123 specimens.

These have all been thoroughly cleaned, poisoned, and placed on new stands. A number of other animals have also been received for this collection and will be placed on exhibition as soon as they are mounted.

In connection with the return of the exhibits from the Cincinnati Exposition considerable work was done by the taxidermists. Mr. A. H. Forney was sent to Cincinnati to unpack and install the exhibits of mammals. This consisted of some sixty boxes, with over one hundred and fifty specimens, which, on their return, were unpacked, cleaned, and, when necessary, repaired.

The space in the Museum occupied by the taxidermic exhibit was needed for the collection of domestic animals, and it became necessary therefore to remove it. This has been done, but the collection does not show to good advantage in its present position. New and larger cases are desirable. When more room is obtained, it is intended to make the collection far more complete than at present.

The following gentlemen have been instructed in taxidermy during the year, especially in the art of making good dry skins: Mr. William Taylor, of San Diego, Texas; Lieut. Emory H. Tannt, U. S. N., representative of the United States in the Congo region; and Mr. Harry Perry, who expects to spend several years in Honduras.

A tanned skin of an albino buffalo calf was received from Lieut. Colonel Kellogg. It was cleaned, poisoned, and placed on exhibition in the fur collection. Five boxes of specimens were packed for shipment. Nine mounted mammals have been repaired, poisoned, and put in good condition. Two seals and a large walrus were placed on new stands. Casts have been made of six bodies or parts of bodies of mammals received in the flesh. These are often of great assistance in mounting, since they furnish the best idea of the size and shape of the species. Quite a number of these are now on hand and form a very interesting and instructive collection.

Congress having provided for the fitting up of the Armory building for the use of the Fish Commission, the third floor of that building has been reserved for the modelers and taxidermists of the Museum. It became necessary therefore to remove this department from the second and fourth floors to new rooms on the third floor. This department now occupies three rooms in the Armory building, a shed outside, containing the collection of pickled skins, and a number of storage rooms in the Smithsonian basement, containing molds and casts.

#### MODELING AND PAINTING.

Mr. J. W. Hendley has continued his work during the year. For the Department of Transportation he has made two lay figures, an Indian hunter on snow shoes with gun in one hand and three birds in the other, and an Eskimo seated on a sled. He has repainted a Japanese carrying-box. For the food collection he has cast and painted a beefsteak, a platter of butter, two loaves of bread, and repaired a number of articles. For the Department of Ethnology he has repaired and cleaned seventy small statuettes, cast and painted thirteen implements, made ten casts of Assyrian seals, together with numerous flat impressions of the same. For other departments: Eight casts of fossil shark's teeth, nine casts of fossil bones, casts of contents of two jars of phosphorus, repaired and painted cast of skull of the fossil bull (*Bos urus*), made fourteen casts of a rare trilobite, and of numerous minor objects.

Mr. Joseph Palmer has done very little taxidermic work during the year, most of his time having been taken up in work on the series of porpoise casts, and in casting and setting up large casts of antique objects. A statement of the most important work accomplished is as follows: Several weeks were spent in changing and repairing the ornamentation of the columns in the Smithsonian building. A complete set of casts was made from the molds of Assyrian antiquities, taken at the Fairfax Seminary, Virginia. He repaired and set up for exhibition a series of Assyrian and Egyptian casts, received from Berlin, twenty-five large and small specimens; repaired and painted a bust of the King of Siam, and made a cast of the Indian chief Osceola; made a mold and

cast of the Siloam inscription, and made a cast of the memorial medalion of Prof. Joseph Henry. Only a few molds of animals have been made during the year, but these have been very important.

A Bottle-nosed whale (*Mesoplodon bidens*) was received whole, and a complete mold of both sides was made, as also a separate mold of the head with the mouth open. The largest of the specimens of the Galapagos tortoises, collected by the Fish Commission steamer *Albatross*, died in the Department of Living Animals, and a mold was made from it. These molds are stored with others, and will be cast in due time.

#### OSTEOLOGICAL PREPARATOR.

Mr. F. A. Lucas, Assistant Curator in the Department of Comparative Anatomy, reports that the work of the past year has been very largely devoted to the preparation of material, and to the care of that already in the collection.

The enlargement of the large exhibition case in the osteological hall, and necessary alterations in the small case, have necessitated the moving of the entire series of specimens on exhibition and their complete re-arrangement.

The preparation of a much-needed card catalogue of alcoholic birds has been commenced and is well advanced, and a large amount of work has been done in classifying and caring for this valuable portion of the collection.

Some work has been done in the preparation of specimens of soft anatomy, and some on invertebrate material, while the greater portion of one month was passed in arranging vertebrate fossils, and in preparing them for exhibition.

The cast of a skeleton of *Dinoceras*, received from the Yale College Museum has been mounted.

At the close of the Cincinnati Exposition the entire labor of packing all the zoological material there exhibited by the Departments of Mammals, Birds, Insects, and Comparative Anatomy was performed under Mr. Lucas's direction, and the collections reached Washington in good condition.

The skeleton of a whale exhibited at Cincinnati was, on its return, again hung from the ceiling of the Museum. Another whale skeleton acquired by the Museum has also been put in place, and a third has been moved to a new location in the osteological hall, and there suspended from the wall on a plan devised by Mr. Lucas.

The following table gives a summary of the material received and of the work of preparation during the year:

	Mammals.			Birds.			Reptiles and Batrachians.			Fishes.		Total.
	Skulls.	Skeletons.	Portions of skeletons.	Skulls.	Skeletons.	Portions of skeletons.	Skulls.	Skeletons.	Portions of skeletons.	Skulls.	Skeletons.	
Received fresh.....		11			25			10			2	48
Cleaned.....	519	12	9	5	47	1	7	3		1	2	606
Mounted.....	10	6			4			1	5			26
Total.....	529	29	9	5	76	1	7	14	5	1	4	680

## PHOTOGRAPHER.

Mr. T. W. Smillie reports that 253 negatives have been added to the permanent files. Of these, 88 related to ethnology, 116 to prehistoric anthropology, 11 to mammals, 3 to osteology, 21 to transportation, 10 to graphic arts, and 181 to miscellaneous subjects. Thirty-nine transparencies were also made.

The number of prints made during the year is 2,199, distributed as follows: ethnological, 190; anthropological, 138; mammals, 22; osteological, 3; transparencies, 77; graphic arts, 10; miscellaneous, 1,759. In addition to this 23 enlargements have been made; 39 cyanotypes have been printed, and a collection of miscellaneous photographs, 113 in number, have been mounted.

The following special work for the U. S. Fish Commission has also been performed: Negatives made, 22; silver albumen prints, 22; cyanotypes, 476.

The usual routine work of numbering and filing negatives, making up outfits for expeditions, etc., has been continued.

By request of the Postmaster-General and by order of the Assistant Secretary, a number of samples of canceling inks have been tested for the Post-Office Department.

The illustrating of the lectures given in the National Museum has been conducted by means of the stereopticon operated by the photographer and his assistants.

A collection intended to show the uses of photography was prepared for exhibition at the Cincinnati Exposition. This collection included valuable contributions of photographs from Prof. E. C. Pickering, of Harvard University, Mr. J. W. Osborne, of Washington, and from several officers connected with the Government service, notably, the Geodetic and Coast Survey; the Light-House Board; the Army Medical Museum, and the proving ground at Annapolis. At the close of the Exposition this collection was returned to the Museum and is now being prepared, in connection with additional material which has since been received, for permanent exhibition. It is intended that the scope of this exhibit shall be enlarged so as to take the form of an

historical collection in which shall be shown examples of every photographic process that has been invented, together with the appliances used, beginning with the photograph of the solar spectrum, as made by Scheele in 1777, and showing each step in the evolution of photography from that time to the present day. Considerable material has already been gathered which will be incorporated in this collection.

The first camera made in the United States has been acquired by purchase. A stereoscope, containing daguerreotypes and transparencies by the old albumen process on glass, was presented by Mrs. E. J. Stone. The Scoville Manufacturing Company of New York, presented a series of cameras showing the latest improvements, and from the Eastman Dry-Plate Company of Rochester, New York, has been received a Kodak camera, together with a series of enlarged photographs, illustrating its use.

The following students have been instructed in photography: Lieut. E. H. Taunt, U. S. N., Mr. W. H. Perry, Miss Frances B. Johnston, Dr. T. H. Bean, Mr. Howard, and Professor J. B. Daish.

In the year 1887, Mr. Smillie was transferred from the U. S. Fish Commission to the National Museum as chief photographer. From that time the photographic work of the Fish Commission has been done in the Museum on the following conditions:

The Commissioner furnishes an assistant, as well as the material and apparatus necessary for the work of the Commission. The work of the assistant is under the supervision of the photographer of the Museum, who makes the requisitions for material, and keeps a record of the work done. In return, the assistant paid by the Fish Commission is expected to assist in work for the Museum, when not occupied in the interest of the Commission.

#### COLORIST.

Mr. A. Zeno Shindler has spent a considerable part of the year in repainting a collection of fish casts for the Cincinnati Exposition. He has painted for use in the Department of Birds two maps, representing the two hemispheres. For the Ethnological Department he has painted eighty-five photographs of Indians, and also sixty-four photographs of Indians and negroes of Surinam, from the collection of Prince Roland Bonaparte. Life-size busts of the King of Siam, King Kalakaua of the Sandwich Islands and Miss Fairehild, have also been painted.

In connection with the formation of a collection of oil paintings representing the races of man, the following types have been finished: Eskimo Dyak of Borneo; Apache (Arizona); Niam Niam (Africa); Chief of the Clallam Indians, Washington; Aborigine of Australia; portrait of the Secretary of the Chinese Legation in Washington.



## DRAUGHTSMEN.

Beginning with the year 1884, the report of the National Museum has consisted of a separate volume, and a section of each report has, since and including that year, been devoted to the publication of papers illustrative of collections in the National Museum. Many of these papers have been illustrated by both photographs and drawings. The former have been made by Mr. T. W. Smillie, photographer. It has been more satisfactory in certain cases to have drawings of the objects prepared in the Museum, especially in connection with the illustration of the following papers: In Report for 1884: "Throwing-sticks in the National Museum", by Otis T. Mason (17 plates); "Basket-work of the North American Aborigines," by Otis T. Mason (64 plates); "A study of the Eskimo bows in the U. S. National Museum," by John Murdoch (12 plates); "The West Indian Seal," by Frederick W. True and F. A. Lucas (3 plates). In Report for 1886: "How to collect Mammal skins for purposes of study and for mounting," by William T. Hornaday (9 figures). In Report for 1887: "Cradles of the American Aborigines," by Otis T. Mason (45 figures); "The Human Beast of Burden," by Otis T. Mason (54 figures); "Ethno-Conchology--A Study of Primitive Money," by Robert E. C. Stearns (9 plates and 22 text figures); "The Extermination of the American Bison," by William T. Hornaday (12 plates and 1 map). In the Report for 1888: "The Indians of the Northwest Coast," by Ensign A. P. Niblack (70 plates and 48 text figures); "Fire-making apparatus in the National Museum," by Walter Hough (8 plates and 60 text figures).

Illustrations for papers on "Eskimo Strike-a-Light," by Walter Hough; "Skin Scrapers," by Otis T. Mason; and "Easter Island," by Paymaster William J. Thomson, U. S. Navy, are now being prepared.

The drawings for the greater part of these illustrations have been made by Mr. W. H. Chandlee and Mr. W. H. Burger, both of whom are in the employ of the Museum, and have been especially assigned to the Department of Ethnology, from which department have emanated the larger proportion of illustrated papers.

A great deal of time has been occupied in piece work connected with general administration and covering the entire field of draughting, embracing topographical and architectural work, tracings and sketch maps, engrossing, lettering, table designing, sketching of articles temporarily in the Museum, coloring of maps and charts, and artistic color work. For these purposes the following mediums were required: oil-colors and water-colors (transparent and opaque), pens and ink, lead pencils, crayons (Conté and lithographic), charcoal, and lamp-black.

## G.—ACCESSIONS.

The total number of accessions to the Museum during the year was 1347.

A table showing the number of accessions to the Museum each year,

beginning with 1881 (the first year of occupancy of the Museum building), is here given :

Year.	Accession numbers (inclusive.)	Accessions.
1881.....	9890-11000	1111
1882.....	11001-12500	1500
1883.....	12501-13900	1400
1884.....	13901-15550	1650
1885 (January to June) .....	15551-16208	658
1885-'86 .....	16209-17704	1496
1886-'87 .....	17705-19350	1646
1887-'88 .....	19351-20831	1481
1888-'89 .....	20832-22178	1347
Total since 1881.....	.....	12289

The decrease in the number of the accessions this year may be accounted for in part by refusals of collections which have been necessitated owing to lack of both storage and exhibition room.

A geographical statement has been prepared, showing the sources of the more important accessions.

#### GEOGRAPHICAL REVIEW OF THE MORE IMPORTANT ACCESSIONS.

During the year, material has been received from nearly every part of the world, although as usual the greater number of the accessions have come from the United States. The following statement has reference to the most important accessions. These have, as far as possible, been arranged under the localities from which they were gathered rather than the place of residence of the sender.

#### AFRICA.

*Madagascar.*—Two linen table-covers, a silver watch-chain, a gold breast-pin, an ivory carving, and a small basket were deposited in the National Museum by President Cleveland, to whom they had been presented by the Queen of Madagascar.

*Egypt.*—Miss Alene Solomon, of Washington, District of Columbia, gave two Egyptian scarabs.

Dr. James Grant-Bey, of Cairo, Egypt, sent several water-color sketches of ancient lamps, two fragments of leather cover (fac-simile) of the catafalque of Isi-Em-Kheh, a queen of the twenty-first dynasty, 1000 B. C., and a fragment of mummy cloth, with characters of the "Ritual of the dead."

A series of casts of Assyrian and Egyptian antiquities were transmitted by the Royal Museum at Berlin.

Oberlin College, at Oberlin, Ohio, presented seventeen bird-skins chiefly from Africa, many of them new to the collection.

## AMERICA.

## BRITISH AMERICA.

*British Columbia.*—A collection of ethnological objects from Vancouver and Queen Charlotte Islands, was purchased by the Museum from Mr. James G. Swan, of Port Townsend, Washington.

*Nova Scotia.*—Mr. George P. Merrill, of the National Museum, collected and transmitted to the Museum specimens of gypsum obtained at Hopewell.

*New Brunswick.*—A collection of Middle Cambrian fossils from the St. John formation, was purchased from Mr. G. F. Matthew, of St. John.

*Canada.*—Mr. H. H. Lyman, of Montreal, sent rare specimens of lepidoptera.

## CENTRAL AMERICA.

*Costa Rica.*—The Museo Nacional de Costa Rica sent two valuable specimens of birds, through Señor José C. Zeledon. A large collection of bird-skins was sent through the same source, for study and comparison, a portion of which were donated to the Museum.

## MEXICO.

*Chihuahua.*—Mr. E. Wilkiuson, of Mansfield, Ohio, sent an egg of the Cactus wren.

Two living Mexican wild-cats and three living chachalacas were received from Capt. Henry Romeyn, of Fort Ringgold, Texas.

## UNITED STATES.

*Alabama.*—Dr. J. S. Taylor, of Mobile, sent fragments of pottery from Baldwin County.

A number of birds, birds'-nests and birds'-eggs were presented by Dr. William C. Avery, of Greensborough.

The Shelby Iron Company sent a variety of minerals.

*Alaska.*—The Alaska Commercial Company, of San Francisco, California, presented a bidarka.

From Lieut. George M. Stony, U. S. N., were received a deer-skin coat, trowsers, boots, skull-cap and sleeping-bag, from Kotzebue Sound, Alaska.

A picture of a crab caught at Sitka was sent by Commander L. A. Beardslee, U. S. N., of Little Falls, New York.

*Arizona.*—A collection of pottery, stone and vegetable fiber objects, gathered at Flagstaff, and pottery from Moqui, were presented by Col. James Stevenson, of the Bureau of Ethnology.

Mr. William W. Price, of Tombstone, sent a set of eggs of the Sulphur-bellied fly-catcher; also four birds'-eggs, new to the Museum collection.

A collection of fishes, reptiles, and batrachians was received from Dr. Edgar A. Mearns, of Fort Snelling.

The Drake Company, of Sioux Falls, Dakota, presented four slabs of agatized wood from Chalcedony Park.

*California.*—Prof. J. S. Diller, of the U. S. Geological Survey, collected rock specimens which were transmitted to the Museum by the survey. He also presented a White-footed field mouse from Mount Shasta.

A medicine stone was received from Mr. H. W. Henshaw, of the Bureau of Ethnology.

Dr. H. C. Yarrow, U. S. A., Washington, District of Columbia, sent an ancient bowl found in Deep Creek Valley.

Mollusks, crustacea and sponges from San Diego, were given by Mr. Henry Hemphill.

Eighteen new species of fishes from the Gulf of California were received from Profs. O. P. Jenkins and B. W. Evermann, of Greencastle, Indiana.

Mr. C. R. Orcutt of San Diego, sent shells from Lower California.

Stone relics were presented by Mr. Stephen Bowers, of San Buenaventura.

*Colorado.*—The U. S. Geological Survey transmitted one hundred and sixty-nine mineral specimens collected in Colorado by Messrs. Cross and Hillebrand, of the Survey.

Rocks, minerals and petrified wood were received from Lieut. Charles F. Pond, U. S. N.

Mr. Henry Zahn, of Denver, sent a piece of geyserite.

Messrs. D. R. C. Brown and Elmer T. Butler, of Aspen, presented a miniature model of Aspen Mountain.

A fine collection of birds, nests, and eggs was received from Mr. Denis Gale, of Gold Hill.

*Connecticut.*—Prof. O. C. Marsh, of Yale College, sent the skeleton of a cormorant for study and comparison.

Minerals were received from Prof. C. H. Hitchcock, of Hanover, New Hampshire, and from O. C. Farrington, of New Haven.

Miss Ellen Oakford, of New Haven, lent seven etchings for exhibition at the Cincinnati Exposition.

*Delaware.*—The Jackson & Sharp Company, of Wilmington, sent cyanotype prints of different classes of railway cars.

*District of Columbia.*—Numerous campaign and Grand Army badges were received from various residents of the District.

Mr. A. C. Winslow, of Washington, presented the original key to the Treasury of the United States when organized under General Washington's administration.

Mrs. E. J. Stone, of Washington, sent a map of the city engraved in 1818, and a fac-simile of the original Declaration of Independence.

Two Indian arrow-heads were given by Mr. David Fitzgerald, librarian of the War Department.

Illustrations of various military and naval uniforms were received from Mr. Paul Beckwith, of the National Museum.

Mr. Robert Ridgway, of the National Museum, presented a collection of bird-skins.

The U. S. Geological Survey transmitted fossil fish through Mr. H. W. Turner, by whom they had been collected.

M. Celeste Moritz, of Washington, presented two living White rats. Two living Prairie dogs were given by Lowell C. Williams, of Washington.

Mr. Walter Hough, of the National Museum, presented a set of waffle-irons and a wooden lock.

The U. S. Coast and Geodetic Survey sent, at the request of the Smithsonian Institution, photographs illustrating the method used in mounting photographic prints, for exhibition at the Cincinnati Exposition.

A Sparrow-hawk and a Wood thrush were received from Mr. B. W. Mitchell, of the National Museum.

Mr. George H. Boehmer, of the Smithsonian Institution, gave a bronze medal, commemorative of the centenary celebration of the Royal Batavian Society of the Academy of Sciences.

Mr. D. Ballauf, of Washington, sent a model of a locomotive for exhibition at the Cincinnati Exposition.

Dr. G. Brown Goode, assistant secretary of the Smithsonian Institution, presented six campaign metallic badges, four lithographs of army hospitals in existence from 1862 to 1869, two silhouettes and eight engravings.

An interesting addition to the photographic exhibit prepared for the Cincinnati Exposition was a collection of cyanotype prints, showing the lights and flames used in the light-houses on the American coast. These were contributed by the U. S. Light-House Board.

Dr. J. L. Wortman, of the U. S. Army Medical Museum, presented four living rattlesnakes.

A cast of the head of President Lincoln, taken sixty days before his death, by Clark Mills, was received from Theodore A. Mills, of Washington.

A collection of land, marine, and fresh-water shells was presented by Messrs. J. D. and F. B. McGuire, being a part of the collection of the late J. C. McGuire.

Mr. John Graham, warden of the city jail, gave a collection of knives, razors, tweezers and a sand-bag, made by prisoners in the District jail.

Mrs. Thomas C. Cox, of Washington, deposited General George Washington's shaving table. This table was presented to General Washington by the first French minister accredited to the United States.

The Department of Agriculture sent a collection of animal parasites.

A Secchi meteorograph was deposited in the Museum by the Chief Signal Officer.

Madame Veuve A. Collin presented a bust of the late President Garfield.

*Florida*.—Lieut. J. F. Moser, of the U. S. Coast and Geodetic Survey, sent birds, shells, insects, snakes, and fishes collected at Cape Sable.

Dr. J. C. Neal, of Archer, presented a collection of ethnological objects.

Shells were received from General F. E. Spinner, Pablo Beach.

Mr. Frederick W. True, of the National Museum, gave field mice, muskrats, snakes, and insects.

Three living rattlesnakes were received from Mr. James Bell, of Gainesville.

*Georgia*.—A large corundum crystal was sent by Mr. N. P. Pratt, of Atlanta.

Mr. M. Hamilton, of Savannah, sent, for experimental purposes, a plant supposed to be antidote for snake bites.

Pottery fragments, from Stalling's Island, were received from Mr. C. C. Jones, of Augusta.

Mr. Alfred Chisolm, of Savannah, presented an albino Red-wing black-bird.

*Illinois*.—Mr. A. J. W. Copelin, of Chicago, sent photographs of locomotives.

Stone implements were received from Mr. W. S. Strode, of Bernadotte.

Mr. Otho C. Poling, of Quincy, gave specimens of birds' eggs.

Mr. C. K. Worthen, of Warsaw, presented three specimens of *Ochetodon* and twelve mammal skins and skulls.

*Indiana*.—Prof. B. W. Evermann, of Greencastle, presented a collection of thirty species of fishes from Deer Creek and the Tippecanoe and Wabash Rivers.

Mr. Robert Ridgway, of the National Museum, collected several specimens of bird skins.

Twenty leaf-shaped implements were sent by Dr. E. C. Black, of Wheatland.

Stone implements, taken from mounds south of Cherokee, were received from Mr. J. V. Ward, of Cherokee.

*Iowa*.—Mr. C. R. Keys, of Burlington, sent specimens of land and fresh-water shells.

A collection of Devonian fossils were received from Prof. A. H. Conrad, of Shenandoah.

*Kansas*.—A collection of invertebrate fossils was received from Dr. W. S. Newlon, of Oswego.

Mr. B. F. Cannon, of Russell Springs, sent specimens of nickel ore.

A skull of a Flathead Indian was presented by Mr. W. Meinhold, of Paola.

*Kentucky*.—Specimens of limonite and iron ore were sent by Mr. T. W. MacGill, of Franklin.

Mr. C. F. Very, of New Albany, Indiana, presented ethnological objects from Grayson County.

*Louisiana.*—Mr. G. Kohn, of New Orleans, presented several specimens of terrapin.

Fifty rude stone implements were received from Mr. George Williamson, of Grand Cane.

*Maine.*—Mr. George P. Merrill, of the National Museum, collected specimens of granite from Red Bank, pebbles from Cape Elizabeth, and diabese from Tenant's Harbor.

A collection of minerals was sent by Mr. N. H. Perry, of South Paris.

Dr. H. C. Yarrow, U. S. A., Washington, District of Columbia, gave a sword-fish head.

Mineral specimens were purchased from Mr. W. P. Hayden, of Raymond.

*Maryland.*—Mr. James A. Millholland, of Cumberland, sent a drawing of the boiler-plate bridge, constructed in 1846 for the Baltimore and Susquehanna Railroad Company.

A broad-winged hawk was presented by Mr. Harold P. Stabler, of Sandy Spring.

Mr. Robert Ridgway, of the National Museum, sent a collection of birdskins.

A living tortoise was received from Mr. Howard Tabler, of Seabrook.

Mr. George Marshall, of Laurel, contributed birds.

A ground dove from Broad Creek and three snake-eggs from the Potomac River were donated by Mr. Thomas Marron, of the National Museum.

Rear-Admiral Daniel Ammen, of Ammendale, deposited a carriage used by General U. S. Grant, in Washington, prior to his election to the Presidency of the United States, and by him presented to Rear-Admiral Ammen in the summer of 1870.

*Massachusetts.*—Rock specimens from Newbury were collected by Mr. George P. Merrill, of the National Museum.

A series of albertypes (seventy-four) were presented by the Forbes Lithographic Manufacturing Company, of Boston.

Eighteen phototypes were received from the Boston Photogravure Company and eleven heliotypes were presented by the Heliotype Printing Company, of Boston.

Mr. G. W. Field, of Brockton, donated an Ibis and two Snake-birds.

Silver prints and lantern slides were sent by the Harvard College Observatory, Cambridge.

Mr. James P. Tilton, of Newburyport, sent fragments of pottery from Plum Island.

A mink was presented by Mr. Vinal N. Edwards, of Wood's Holl.

A whale skull was received from Mr. William H. Jackson, of Pigeon Cove.

Mrs. Anne E. Douglass, of Cambridgeport, presented plaster busts of governors of all States in office January 1, 1860, with the exception of Oregon and California.

*Michigan.*—A collection of bird skins, containing several species new to the Museum collection, was purchased from Mr. W. H. Collins, of Detroit.

Mr. C. A. Thompson, of Quincy, sent a specimen of stone carving from a mound near Coldwater.

*Minnesota.*—Mr. C. Bangs, of Wolverton, sent specimens of copper implements found in Wilkin County.

Mr. James Rigby, of Minneapolis, presented a model of a car-wheel.

The State Normal School, at Winona, sent insects, crustacea, plants, and shells.

*Mississippi.*—A collection of Indian pottery and several stone objects, from Prentiss County, were transmitted by the U. S. Geological Survey.

Mr. Charles E. Chidsey, of Scranton, sent sixty-eight specimens of pottery.

*Missouri.*—Mr. J. E. Callaway, of Ravenna, sent an interesting specimen known as a hair ball. These balls are found in the fourth compartment of the stomachs of cattle, and are composed of hairs licked from the surface of the body.

Rocks were received from Mr. Erasmus Haworth, of Oskaloosa, Iowa.

Mrs. Clara B. Davidson, of St. Louis, donated a saber presented to General J. W. Davidson, U. S. Army, for gallant conduct during the capture of Little Rock, Arkansas, in 1863.

*Montana.*—Col. J. I. Allen, of Stillwater, sent photographs of Crow Indians.

Among the most important acquisitions from Montana were two buffalo skins purchased from W. T. Hornaday, of the National Museum, on his return from the buffalo expedition to Montana.

Mr. Ellingson Knute sent samples of ore.

Dr. Thomas J. Reed, of Great Falls, presented two living Sparrow-hawks.

A fine living wolf was received from Mr. C. A. Dole, of Glendire.

*Nevada.*—A large collection of rocks (embracing about two thousand specimens) of the Comstock Lode and Washoe District, Nevada, collected by Messrs. S. F. Emmons and G. F. Becker, was received from the U. S. Geological Survey.

*New Hampshire.*—Four mammal skins, two insects, a turtle, and a woodchuck, were presented by Mr. Loren W. Green, of Charlestown.

Mr. G. P. Merrill, of the National Museum, collected for the Museum granite from West Concord.

Minerals and rocks were received from Prof. C. H. Hitchcock, of Hanover.

*New Jersey.*—Three arrow-heads were received from Mr. Charles Mead, of Sayreville.

Mr. G. P. Merrill, of the National Museum, collected for the Museum serpentine and associated minerals.

A specimen of Sowerby's whale was sent by Capt. J. L. Gaskill, keeper of the U. S. Life-Saving Station at Absecon, New Jersey.



*New Mexico.*—Maj. J. W. Powell, Director of the U. S. Geological Survey, transmitted fragments of pottery from James Valley, also pottery and stone objects from Abiquin.

Large collections of pottery and stone objects from various parts of New Mexico, were sent by Messrs. James Mooney, James Stevenson, W. H. Holmes, Arthur P. Davis, Dr. Washington Matthews, and Mr. Victor Mindeleff, of the Bureau of Ethnology.

Dr. R. W. Shufeldt presented a hawk, a living rattlesnake, a Long-billed Marsh wren, field mice and pocket mice, and the skin of a Red-tailed Hawk, from Fort Wingate. Eight batrachians were collected by Dr. Shufeldt and John G. Morse, of Fort Wingate.

H. W. Bremen, of Silver City, sent a root supposed to be an antidote for snake bites.

*New York.*—The Central Park Menagerie sent a stork and three eggs of the Black swan.

W. W. Worthington, of Shelter Island, sent specimens of arrowheads and flakes.

A valuable and interesting collection of photographic apparatus and prints was received from the Eastman Dry Plate and Film Company, of Rochester.

W. W. Adams, of Union Springs, sent shell beads.

From William A. Hakes, of Binghamton, were received pottery fragments and stone objects from Broom County.

Rocks were collected by G. P. Merrill, of the National Museum, from Keeseville and Stony Point.

Fred Mather, of Cold Spring Harbor, presented two Mandarin ducks.

Harper Brothers, of New York City, donated illustrations of the railway passenger-car.

The skeleton of a Black whale was purchased from H. A. Ward, of Rochester.

The Scovill Manufacturing Company, New York City, donated five photographic cameras and one extension tripod.

Miss Anna Randall Diehl, New York City, deposited a collection of oriental seals.

Eight watches of different designs were purchased from Tiffany & Co., New York City.

Dr. Sanderson Smith, of New York City, presented seven rare minerals.

Two specimens of Algean marble were sent by E. Fritsch, of New York City.

An important and interesting contribution to the Department of Graphic Arts, was the gift of 137 engravings, illustrating the various mechanical engraving processes, from Prof. C. F. Chandler, of Columbia College, New York City.

Photographs of street cars were received from the John Stephenson Company, New York City.

E. M. Lewis, of Bedloe's Island, presented birds which had been killed by flying against the statue "Goddess of Liberty," in New York Harbor.

J. M. Falconer, of Brooklyn, gave an engraving, "The Building of Brooklyn Bridge."

A lithograph of a landscape by Tudot was received from S. P. Avery, New York City.

A large collection of minerals, containing 1,371 specimens, collected by S. L. Penfield in Jefferson, Louis, and St. Lawrence Counties, was transmitted by the U. S. Geological Survey.

*North Carolina.*—J. M. Spainhour, of Lenoir, presented a specimen of asbestos.

G. P. Merrill, of the National Museum, collected peridotite, chromide, and nickel ores from Webster. He also presented photographic negatives of views taken at Webster.

The observer of the U. S. Signal Service at Charlotte sent flexible sandstone.

E. S. Bowers, of Webster, presented amethysts, two sapphire corundums, and a brown star sapphire.

Several fine mineral specimens were sent by D. A. Bolman, of Bakersville.

William H. Gaskill, keeper of the Life-Saving Station, Cape Lookout, sent a sunfish.

*Ohio.*—From the Cincinnati Society of Natural History was received a collection of bone, shell, and stone implements gathered from graves in Madisonville.

William H. McGinnis, Member of Congress, of Youngstown, sent stone implements, flakes, arrow and spear heads.

Coleoptera and lepidoptera were donated by Charles Dury, of Cincinnati.

A large collection of stone objects and pottery, containing 4,710 specimens, was deposited by Warren K. Moorehead, of Xenia.

Thomas Wilson, of the National Museum, presented a collection of bone, shell, and stone implements from Anderson Township and Clermont County.

Selenite crystals were received from C. S. Mason, of Toledo.

Carey Bell, of Utica, sent a stone axe.

*Oregon.*—Livingston Stone, sent a specimen of fungus which was found growing in a fir log near Clackamas Station.

Three water lizards from Fort Klamath were received from Capt. G. S. Carpenter, U. S. Army.

*Pennsylvania.*—A specimen of stone pestle from Colocksink Creek was received from George W. Haig, of Philadelphia.

The Zoological Society of Philadelphia presented a Sheath Bill and a Cockatoo.

E. L. Pintard, of Philadelphia, deposited a file of the "Philadelphia Photographer", 1867-1887.

Two stone implements found near New Brighton, were given by Thomas Wilson, of the National Museum.

Fred Speel, of Philadelphia, sent a Toad-fish.

Four ethnological objects were received from George C. Fryer, of Philadelphia.

James D. Middleton collected and transmitted through the U. S. Geological Survey, pottery fragments from Irvine, Warren County, Pennsylvania.

A cast of a supposed human face found in the Hamilton sand-rock was received from F. W. Gibson, of Falling Springs.

E. F. Schafirt, of Media, presented a skeleton of a Rose-breasted Cockatoo.

George P. Merrill, of the National Museum, collected copper and serpentine rock, from Cornwall, and slate from Franklin and Bangor.

The Baldwin Locomotive works, of Philadelphia, presented several photographs of modern locomotives.

Several silver prints from negatives taken in an anthracite coal mine were received from E. B. Harden, of Philadelphia.

William Bell, of Philadelphia, presented two photographic cameras.

*Rhode Island.*—A valuable collection of petroleum and related materials was received from Prof. S. F. Peckham, of Providence. This collection was made in connection with Professor Peckham's work for the Tenth Census, by a special arrangement with Professor Baird.

Silas Carr, of Providence, sent a collection of minerals.

Eight etchings were received from Samuel Coleman, of Newport.

Miss M. Francis, of Newport, sent a type-writer invented by the late Dr. Samuel Ward Francis in 1857.

George A. Lewis, of Wickford, presented fishes.

*South Carolina.*—A metal copy of the original memorial tablet designed to commemorate the services of the Charleston Relief Committee during the earthquake in 1886, was presented by Tiffany & Company, of New York.

*Tennessee.*—W. D. Dreher, of Knoxville, sent an Indian axe.

A. S. Oldham presented two sets of buckhorns found in Lauderdale County.

Pottery fragments were received from General G. P. Thurston, of Nashville.

Campbell Brown, of Spring Hill, presented flint implements from that place.

*Texas.*—G. H. Ragsdale, of Gainesville, sent a collection of fossil shells and bird skins, also a Pouched rat.

A living Civet cat was received from E. N. Hasbrouck, of Brownwood.

William Taylor, of San Diego, sent a stone implement from that place.

*Vermont.*—A collection of stone objects was received from Prof. G. H. Perkins, of Burlington.

G. P. Merrill, of the National Museum, collected granite in Craftsburg.

Prof. H. M. Seely, of Middlebury, sent specimens of calciferous fossils.

*Virginia.*—Thomas H. Tolson, of Shamrock, presented a White-headed Eagle.

Two living Black bears, captured in Virginia, were presented by the Hon. J. S. Miller, Commissioner of Internal Revenue.

M. M. Wakefield, of Annandale, sent a Great-horned owl.

Four living Angora goats were presented by the Misses Grace and Mand Parsons, of Natural Bridge.

Robert Ridgway, of the National Museum, collected bird-skins in Virginia.

Stone objects from Chain Bridge were sent by Dr. L. W. Gill.

Four living rabbits were presented by C. Edgar Uber, of Falls Church.

Millard Burch, of Ballston, donated six living Night herons.

Alexander Hunter, of Washington, gave a confederate army jacket.

A Hog-nosed snake was received from Col. W. Shutt, of Hillsboro.

Dr. Hugh M. Smith, of the National Museum, sent four birds from Back River.

Rev. R. Ryland, of Richmond, sent samples of light wood from Richmond, and a living mink from Langley.

The following objects, formerly the property of General Washington, were received from Lawrence Washington, of Marshall:

1 pitcher portrait of Washington (china-ware).	1 colored picture in frame, view of old church near Limerick.
1 statuette of Necker.	1 colored picture in frame.
1 journal of household and personal expenses of Washington, March, 1793, to March, 1797, in writing of secretary or steward.	1 portrait in frame, "Madonna with Book."
1 sword-blade.	1 portrait in frame, "St. John."
1 spy-glass.	1 engraving, "Louis XVI."
4 engravings in circular frames.	1 picture in frame, "Fall of the Bastille."
	1 mirror.

*Washington.*—From the U. S. Geological Survey were received specimens of native platinum.

Five eggs of the Short-nosed owl were received from Godfrey Koenig, of Sassin.

*West Virginia.*—A peculiarly colored duck egg, laid the night after the duck was seen eating the shells of dyed Easter eggs, was received from W. H. Lewis, of Jefferson County.

Greenland Thomson, of Morgantown, sent several ethnological objects.

A canteen of 1863 was received from Col. Frank Thomson, of Morgantown.

Edward P. Whaites, of Alderson, presented a memorial medal of George Washington.

A flint-lock pistol and lantern were received from Col. Ashbel Fairchild, of Morgantown.

Mrs. L. I. Hough, of Morgantown, sent a basket formerly used in making bread.

A coffee-biggin was donated by Mrs. Casselberry, of Morgantown.

Two living vipers were sent by Alexander McVeigh Miller, of Alderson.

A Dutch oven and an old brass candlestick were sent by Miss Emma Protzman, of Morgantown.

*Wisconsin.*—A medallion of General Lucius Fairchild, commander-in-chief of the Grand Army of the Republic, 1887, was presented by F. L. Phillips, of Madison.

H. P. Hamilton, of Three Rivers, sent pottery fragments.

Pottery from Yellow Lake was sent by Gerard Fowke.

H. Eggers, of Milwaukee, presented two patent boomerangs.

*Wyoming Territory.*—Two fine living elk were received from Hon. W. F. Cody (Buffalo Bill), of North Platte, Nebraska.

Emile Granier, of Atlantic, deposited a polished agate.

A Western porcupine from Fort Bridges, was received from Dr. C. Hart Merriam, of the Department of Agriculture.

#### WEST INDIES.

*Cuba.*—A collection of ores, forming a valuable addition to the metallurgical exhibit in the Museum, was received from Hon. Otto E. Reimer, United States consul to Santiago de Cuba, through the Department of State.

*Guadeloupe.*—The Museum of Comparative Zoology, Cambridge, Massachusetts, sent a collection of fishes.

A collection of bird-skins was received from L. Guesde, Point-à-Pitre.

#### SOUTH AMERICA.

*Argentine Republic.*—Walter B. Barrows, of the Department of Agriculture, presented a collection of reptiles, insects, and land shells.

*Brazil.*—A collection of bird-skins, comprising one hundred and eighty-seven specimens from Bahia, were purchased from Prof. Leslie A. Lee, Thomas Lee, and Charles H. Townsend, of the U. S. Fish Commission. Prof. Orville A. Derby, National Museum, Rio de Janeiro, sent, in exchange, several specimens of ores and one meteoric specimen.

Specimens of iron ore, coal and coke, from Rio Grande de Sul, were received through the Department of State.

*Peru.*—Woven fabrics from Ancón were presented by G. H. Hurlbut.

*Uruguay.*—Thomas H. Brooks, of Montevideo, sent the skin and bones of a Sea-lion from the coast of Uruguay.

*Venezuela.*—A valuable collection of beetles collected in Venezuela, were sent by Ernst C. Colby, of Curaçoa.

Photographs of Indians of the Goajira Peninsula were received from the Department of State, through the Hon. T. F. Bayard.

The Zoological Society of Philadelphia presented a deer, in the flesh, from South America.

The Museum of Comparative Zoology, Cambridge, Massachusetts, sent a collection of fishes from South America.

Maj. J. W. Powell, Director U. S. Geological Survey, presented two feet of a Harpy eagle.

#### ASIA.

*China.*—The Chinese Minister, at Washington, sent a beautifully mounted, carved, temple urn, of the Shang dynasty, B. C. 1762, and an ancient jade audience-ring.

A very valuable collection of religious objects from northern China and Thibet used by the Lama priests in their religious ceremonies was deposited by W. W. Rockhill. These consist of prayer wheels, Buddhist books, libation bowl, prayer beads, images of gods, etc. He also presented a scroll picture, in colors, of life in Chinese Turkestan.

P. L. Jouy, of the National Museum, presented a Chinese bow and five arrows.

*Corea.*—A large and valuable collection of Corean birds, comprising five hundred and forty-seven specimens, was purchased from P. L. Jouy of the National Museum.

*India.*—Mrs. W. Scott, of London, England, presented specimens of Tusser silk cocoons from Sadra.

The Royal Botanical Garden, Seebpore, sent in exchange an exceedingly valuable collection of mounted plants from India.

*Persia.*—Rev. J. L. Potter, of Drakesville, New Hampshire, sent a complete suit of a Persian Mohammedan priest, from Teheran, Persia.

A cast of a seal of Darius, King of Persia, and two casts of Babylonian seals were presented by Isaac Myer, of Philadelphia.

*Japan.*—A very interesting collection of Japanese birds, containing one hundred and nine specimens and seventy-four species, from southern Japan, was presented by T. Ringer, of Nagasaki. Among them was a fine male specimen of the true Sommering's Pheasant (*Phasianus serripennis*) and a Spoon-billed sandpiper (*Eurymorhynchus pygmaeus*).

A collection of ivory figures was purchased from Tiffany & Company, New York City.

A collection of bronze and wooden figures was purchased from Edward Greey, New York City.

A Buddhist rosary and two birds were received from P. L. Jouy, of the National Museum.

Harry V. Henson, of Yokohama, sent a bird from Hakodate.

Japanese musical instruments, two Japanese masks, porcelain ware, and a palanquin were purchased from the First Japanese Trading Company, New York City.

The Tokyo Library and Tokyo Educational Museum presented a very fine collection of Japanese plants.

*Jerusalem.*—A shofar, or ancient Jewish trumpet, made of ram's horn, was presented by David Sulzberger, of Philadelphia.

An alabaster model of a Mosque in Jerusalem was deposited by the Rev. J. P. Newman, of New York.

#### EUROPE.

*Austria.*—The Royal Imperial Natural History Museum, of Vienna, sent, through Dr. Aristides Brezina, a collection of meteorites, and also sent in exchange one hundred and seventeen specimens of building stones.

Three meteorites were received, in exchange, from Baron Braun, of Vienna.

A collection of twenty-four bird skins was received, in exchange, from Victor Ritter von Tschusi zu Schmidhoffen, of Salzburg.

Chevalier Schmit von Tavera, minister from Austro-Hungary, presented an ethnological map of Hungary.

*Denmark.*—A collection of fishes representing sixty-seven species, from northern seas, was received, in exchange, from the Zoological Museum of the University of Copenhagen.

A silver cross of the "Order of Danenborg" was presented by Paul Beckwith, of the National Museum.

*France.*—The Musée d'Histoire Naturelle, Paris, sent, in exchange, one hundred and ninety-five specimens of modern and antique marbles from Europe and Africa.

The Musée de St. Germain, Paris, sent, in exchange, molds of bronze implements.

Thomas Wilson, of the National Museum, presented minerals from Brittany.

A collection of five hundred specimens of stone implements from various localities of France was purchased from E. R. Reynolds, of Washington, District of Columbia.

*Germany.*—C. Kickhoff, of New York, sent samples of alloys from Germany.

A collection of bird-skins was purchased from Dr. E. Rey, of Leipsic.

*Great Britain.*—From the Royal Botanical Gardens at Kew, was received a collection of vegetable economic products, including textiles, foods, gums, materia medica, botanical and ethnological specimens.

F. W. Webb, locomotive superintendent of the London and North-western Railway Company, Crewe, sent photographs of Trevithick's engine and boiler.

The State Department sent a collection, made by W. F. Grinnel, United States consul at Bradford, England, of woolen, worsted, silk, and cotton fabrics.

Three casts of *Meiolonia* from Lord Howe Island, was sent by the British Museum.

A collection of ethnological objects was received from Edward Lovett, of Croydon, near London.

*Italy.*—The Royal Museum, Florence, sent, in exchange, through Prof. Henry H. Giglioli, one hundred and fifty fishes, two hundred and thirty-four birds, thirty-two reptiles, and twenty-four mammals.

Seven European bats were received from Angelo Senna, of Pavia.

A. A. Blair, of Philadelphia, sent crystallized hematite from the Island of Elba.

*Norway.*—A complete model of a Viking ship was purchased for exhibition at the Cincinnati Exposition, from Albert Cammermeyer, of Christiania.

A Killer whale was received, in exchange, from the Zoological Museum, Royal University, Christiania.

*Roumania.*—A. L. Montandon, of Bucarest, sent, in exchange, specimens of coleoptera and hemiptera from eastern Europe.

*Russia.*—A military medal from the Crimea was received, in exchange, from Paul Beckwith, of the National Museum.

The Museum of Natural History, at Tiflis, sent through Dr. Gustave Radde, a collection of Caucasian and Transcaspian bird-skins.

*Scotland.*—D. Bruce Peebles, of Edinburgh, sent pith of the rush used as a lamp wick.

*Switzerland.*—The Musée d'Ethnologie, Geneva, sent, in exchange, a very fine collection of Lacustrian pottery, vase, bronzes, bracelets, and collars.

## OCEANICA.

### AUSTRALASIA.

*Australia.*—Baron Ferdinand von Mueller, of Melbourne, sent a collection of Australian plants.

*New Zealand.*—A collection of fishes, representing forty-one species, was received from the Otago University Museum, Dunedin, through Dr. T. Jeffery Parker.

An interesting collection of birds, rocks, minerals, shells, and ores was received from Prof. T. F. Cheeseman, curator of the Auckland Museum.

A valuable collection of New Zealand woods was received, in exchange, from the Canterbury Museum, Christchurch.

*New South Wales.*—The Department of State presented a case containing samples of Australian wools collected by the United States consul at Sydney.



## POLYNESIA.

*Hawaiian Islands.*—A collection of ferns containing one hundred and ten species, from the Hawaiian Islands, was received from G. W. Lichenthaler, Bloomington, Illinois, in exchange for ferns from Costa Rica. Valdemar Knudsen, of Waia, presented two petrels.

## H.—SPECIMENS SENT FOR EXAMINATION AND REPORT.

A large number of specimens are received each year for examination and report. A separate record of these is kept. When specimens thus received are worthy of addition to the collections, they are entered on the accession record, and receive a number in the accession series. No less than three hundred and forty-seven lots of specimens of this kind were received during the year. In each case the specimens are examined by the curator to whose department they relate, and he submits a formal report upon them. A copy of this is transmitted to the sender. A list\* of these specimens received is here given together with an index arranged by localities. It should be stated, perhaps, that the object of printing this list is the same as for printing the list of letters asking for information, which has been already explained on p. 88.

- ADAMS, WILLIAM W., Mapleton, New York. Fragment of supposed meteorite. 306, '88 (XVI); copper spear-heads, from Michigan and New York. (Purchased.) 147 (22229), '88 (III.)
- AIKEN, J. CHAP., Jonesborough, Tennessee. Larva of insect. (Returned.) 140 '88 (X).
- AINSWORTH, W. P. H., Taylorsville, Mississippi. Minerals. 182, '88 (XVI).
- ALBA, A., Norwalk, Florida. Larva of insect. 244, '88 (X).
- ALLEN, J. A., American Museum of Natural History, New York City, New York. Birds, from Brazil. (Borrowed for study and returned.) 406, '89 (V, A).
- ALLEN, J. C., White Gate, Giles County, Virginia. Chart from Virginia. (Returned.) 203, '88 (XVII). Bird skins. (Borrowed for study and returned.) 289, '88 (V, A).
- ALTSCHUL, M., Hampton, Virginia. Rock. 183, '88 (XVII). Fossil shark teeth (two specimens). 183, '89 (XII). Cenozoic fossil (fragment). 183, '88 (XIII, B).
- AMERICAN MUSEUM OF NATURAL HISTORY, New York City, New York. Bird skins from Brazil. (Returned.) 363, '89 (V, A). Birds. (Borrowed for study and returned.) 468, '89 (V, A). Birds (12). (Borrowed for study and returned.) 474, '89 (V, A).
- AMES, FISHER, Lakeside, Michigan. Fossil coral. 301, '88 (XVI).
- APPLETON, JNO. W. M., Salt Sulphur Springs, West Virginia. Insect. 460, '89 (X).
- ASHLEY, GEORGE, New Flat Fork, Virginia. Ore. 293, '88 (XVIII).
- ASKEW, H. G., Tyler, Texas. Shells, from Texas. 473, '89 (IX).
- AT LEE, W. YORK, Washington, District of Columbia. Tripoli. (Returned.) 238, '88 (XVIII).
- AVERY, DR. WILLIAM C., Greensborough, Alabama. Bird skins. 419, '89 (V, A).

\* Entries having double numbers indicate that the specimen was first sent for examination and report, and was afterwards added to the collections.

- AYRES, Col. E. W., Washington, District of Columbia. Bog-ore. 197, '88 (xviii).
- BABCOCK, Dr. S. E., Chester, South Carolina. Limonite; oxide of iron. 262, '88 (xvi).
- BACON, N., Talcott, West Virginia. Argillaceous sandstone. 404, '89 (xviii).
- BAKER, DANIEL, Buckeystown, Maryland. Specimens of building stone. 342 (21671), '89 (xvii).
- BARBOUR, THOMAS P.; San Antonio, Texas. Mineral. 282, '88 (xvi).
- BASINSKI, J. & BROTHERS, Miles City, Montana. Plant, 164, '88 (xv).
- BAXTER, R. F., Glen's Falls, New York. Rock. 319, '88 (xvii); ore. 339, '89 (xviii).
- BEAUCHAMP, W. M., Baldwinsville, New York. Stone implements. (Returned.) 469, '89 (iii).
- BERRY, Hon. J. H., United States Senate. Iron ore. 185, '88 (xviii); copper ores. 256, '88 (xviii).
- BEWERTHEIM, A. T. & SONS, San Louis Potosi, Mexico. Topaz crystal. 456, '89 (xvi).
- BIBIKOV, N. A., Albuquerque, New Mexico. Ores. 314, '88 (xviii).
- BILLET, GEORGE, Shoeks Mills, Pennsylvania. Iron pyrites. 278, '88 (xvi); minerals. 297, '88 (xvi).
- BISSIG, FRANK, Payson, Arizona. Ore. 169 (21089), '88 (xviii).
- BLUME, EDWARD L., Mount Savage, Maryland. Quartz and limestone concretion. 356, '89 (xvii).
- BOARD, A., Jackson Court-House, West Virginia. Silver ore. 152, '88 (xviii).
- BRUFF, Mrs. J. G., Washington, District of Columbia. A collection of ethnological material. 458, '89 (ii, a).
- BOND, WARREN R., Custer, Dakota. Ore. 326, '89 (xviii).
- BOWMAN, D. A., Bakersville, North Carolina. Sample of supposed mineral water. 154, '88 (xvi).
- BOWMAN, N. W., Taylor Springs, Virginia. Calcite. 216, '88 (xvi).
- BRADSTREET, E. C., Gold Hill, Colorado. Quartz. 285, '88 (xvi).
- BRENINGER, G. F., Fort Collins, Colorado. Pine Grosbeak. (Returned.) 384, '89 (v, a).
- BREWSTER, WILLIAM, Cambridge, Massachusetts. Birds from Chihuahua, Mexico. (Returned.) 192, '88 (v, a); birds from Chihuahua, Mexico. (Borrowed for study and returned.) 181, '88 (v, a).
- BRIGGS, S. M., Washington, District of Columbia. Ore. 241, '88 (xviii).
- BRUCE, DAVID, Brockport, New York. Insects, principally from Colorado. 280 (21679), '88 (x).
- BRUCE, GEORGE A., Worsham, Virginia. Mineral. 365, '89 (xvi).
- BRUCE, Miss M. W., New York City. Six Babylonian Tablets and three Cylinders. (Borrowed for study and returned.) 408, '89 (i).
- BRYANT, WALTER E., San Francisco, California. Bird skins, from Lower California. (Returned.) 295, '88 (v, a); bird skins. (Borrowed for study and returned.) 172, '88 (v, a).
- BUIE, D. M., Burgaw, North Carolina. Insects. 457, '89 (x).
- BULL, AMOS, Page, Kansas. Ores containing iron and nickel. 251, '88 (xviii).
- BULLOCK, JAMES A., Pittard, North Carolina. Tree cricket. 243, '88 (x).
- CAMPBELL, W. M., Texarkana, Texas. Ore, 283, '88 (xviii).
- CANNON, B. F., Russell Springs, Kansas. Iron ore. 211, '88 (xviii); ore. 196, '88 (xviii).
- CANTRELL, GEORGE G., Minneapolis, Minnesota. Bird skins. (Returned.) 381, '89 (v, a).
- CARTER, F. L., Cleveland, Ohio. May fly (*Palengenia bilineata*). 139, '88 (x).
- CASE, S. J., Traverse City, Michigan. Flowers. 167, '88 (xv).
- CHASE, JAMES H., Ironton, Missouri. Three specimens of minerals. 371, '89 (xvi).
- CHASE, Miss SUSIE F., Takoma Park, District of Columbia. Ferns. 141, '88 (xv).
- CHESNEY, H., New Orleans, Louisiana. Insects. 229, '88 (x).

- CHESNEY, J. C., Northumberland, Pennsylvania. Ores. (Returned.) 332, '89 (XVIII).
- CHRISTOPHER, M. J., Richmond, Virginia. Brain coral, from the West Indies. (Returned.) 268, '88 (XI).
- CHURCH, I. S., Kelly, New Mexico. Copper. 318, '89 (XVII).
- Cincinnati Society of Natural History, Cincinnati, Ohio. Vertebra (portion) of Mastodon. (Returned.) 480, '89 (XII).
- CLARK, WALDO J., Mullen, Idaho. Mineral. 415 (22,095), '89 (XVI).
- COALE, H. R., Chicago, Illinois. Bird skins. (Returned.) 171, '88 (V, A).
- COCHRAN, J. P., New York City, New York. Babylonian cylinder. (Returned.) 1887, '88 (I).
- COLEMAN, JOHN B., Baker City, Oregon. Mineral. 439, '89 (XVI).
- COLLETT, Prof. R., University of Christiania, Christiania, Norway. Bird skins. 217, '88 (V, A).
- Colorado Biological Association (through Theodore D. A. Cockerell, secretary), West Cliff, Colorado. Cretaceous fossils. (Returned.) 331, '89 (XIII, B).
- COMBS, J., Beaver, West Virginia. Mineral. 467, '89 (XVI).
- COOK, T. M., Jackson, Cherokee County, Texas. Limonite, from Texas. 403, '89 (XVIII); ore, from Texas. 545, '89 (XVIII).
- Copake Iron Works, Columbia county, New York (through Fred. P. Miles). Wrought iron. 346, '89 (XVIII).
- CORDER, JONATHAN O., Guest's Station, Virginia. Clay. 320, '88 (XVIII).
- COTMAN, A. J., Cedar Glades, Arkansas. Lead and zinc ores. 227, '88 (XVIII).
- CURTIS, W. E., Washington, D. C. Stone carving, representing a llama. (Lent by request and returned.) 328, '89 (III).
- DALLAS, JOHN, Fairfield, Connecticut. Lepidoptera. (Returned.) 399, '89 (X); Lepidoptera. 428, '89 (X).
- DALY, P. C., Chattanooga, Tennessee. Ores. (Returned.) 329, '89 (XVIII).
- DANIELS, O. E., Pecatonica, Illinois. Red bat. 233, '88 (IV).
- DAVIS, JOHN M., Fayette Court-House, Alabama. Insects. 478, '89 (X).
- DAVIS, Hon. H. G., Baltimore, Maryland. Cannel coal, from West Virginia. 337, '89. (XVIII).
- DECKER, C. L., Dayton, Wyoming. Plant from Wyoming. 419, '89 (XV).
- DIBBLE, DAVID D., Springfield, Utah. Petroleum. 325, '89 (XVIII).
- EASTWOOD, Miss ALICE, Denver, Colorado. Plants. 261, '88 (XV).
- ELAM, W. C., Trevilian's, Virginia. Mole cricket, *Gryllotalpa longipennis*. 191, '88 (X).
- ELLINGSON, K., Virginia City, Montana. Oxide of iron. 146 (20,960), (XVIII).
- ELLIS, R. T., Grimm's Landing, West Virginia. Impure limestone and clay marl. 367, '89 (XVII).
- EMERSON, Mrs. ELIZABETH, Palma Sola, Florida. Shell, *Voluta junonia*. 409, '89 (IX). (Returned).
- ENGLISH, GEORGE L. & Co., Philadelphia, Pennsylvania. Mineral. 272, '88 (XVI); mineral. 327, '89 (XVI); crystals. 396, '89 (XVI); crystals. 397, '89 (XVI). Minerals. (Part returned.) 421 (22,099), '89 (XVI).
- EVANS, EVAN M., Princeton, New Jersey. Bird. (Returned.) 374, '89 (V, A).
- EVANS, FRANK H., San Bernardino, California. Minerals, rocks, and ores. 413, '89 (XVI).
- FAUNTLEROY, T. T., Staunton, Virginia. Stone implements. 221, '88 (III).
- FIELD & GREENWOOD, Brownsville, Texas. Bird skins. 313, '89, (V, A); birds. (Returned.) 398 '89, (V, A). Birds (five specimens) from Brownsville, Texas. 418, '89, (V, A). Eggs of Western Night-hawk (two specimens) and one bird skin. 476, '89 (V, A).
- FISHER, EMORY, Phoenix, Arizona. Ore. 465, '89 (XVIII).
- FOOTE, GEORGE B., Helena, Montana. Minerals. (Returned.) 416, '89 (XVI).
- FORCE, HOUSTON T., St. Louis, Missouri. Vertebrae of fossil animal, found in Clark County, Arkansas. 420, '89 (IV).

- FOY, ALFRED D., Lookout Mountain, Tennessee. Indian-pipe plant (Corpse plant) 219, '88 (xv).
- FULLER, IRA C., Brookville, Pennsylvania. Ore. 379, '89 (xviii); minerals from Kentucky. 385, '89 (xvi).
- FRENCH, CLARENCE E., Jacksonville, Cherokee County, Texas. Galena. 341, '89 (xviii); iron pyrites. 387, '89 (xvi); minerals. 425, '89 (xvi); ore from Texas. 431, '89 (xviii).
- FRENCH, G. H., Carbondale, Illinois. Insects. (Returned.) 357, '89 (x).
- FRY, F. G., New Orleans, Louisiana. Amazonian figures. 445, '89 (ii, a).
- GAWTHROP, J. E., Huttonsville, Randolph County, West Virginia. Oehre. 153, '88 (xvi).
- GAY, W. H., New York City. Carbon in stick. 392, '89 (xviii).
- Geological Survey of Canada, Ottawa, Canada. Fossils. 369, '89 (xiii, a).
- GERMAIN, W. H., Glendora, California. Coal. 180, '88 (xviii).
- GILBERT, J. F., Abbeville County, South Carolina (through Hon. J. S. Cothran, House of Representatives). Gold ore. 271, '88 (xviii).
- GILLETE, Prof. E. P., Iowa Agricultural Experiment Station. Insects (fifteen specimens). (Returned.) 267, '88 (x).
- GILLILAN, Rev. J. D., Beaver, Utah. Clay. 376, '89 (iii).
- GOAN, W. R., Hot Springs, North Carolina. Insect. 479, '89 (x).
- GOFF, Hon. N., House of Representatives, Washington, District of Columbia. Quartz. 322, '89 (xvi).
- Goss, N. S., Topeka, Kansas. Humming-birds (eight specimens) from Central America. (Returned.) 215, '88 (v, a); birds from Mexico. (Returned.) 471, '89 (v, a.)
- GRIGSBY, W. T., Union City Tennessee. Mole cricket. 265, '88 (x).
- GROVER, J. T., Tampa, Florida. Root. 277, '88 (i, a).
- GUERNSEY, Rev. J. W., Rutland, Vermont. Carpet-bag. 393, '89 (x).
- HALLOCK, CHARLES, Plainfield, Massachusetts. Rock. 220 (21, 273) '88 (xvii).
- HANCOCK, Dr. JOSEPH L., Chicago, Illinois. Bird skin. (Returned.) 429, '89 (v, a).
- HANNON, V. T., Texarkana, Texas. Lead and zinc ores, 269, '88 (xviii).
- HARLAN, JAMES, Navajoe, Indian Territory. Insect. 472, '89 (x).
- HARLOW, WILLIAM H., Sewanee, Tennessee. Fern. 441, '89 (xv).
- HARRIS, GEO. E., Cassville, Missouri. Plants. 432, '89 (xv); plants. 455 (xv); plants, 470, '89 (xv).
- HARRIS, JONAH, Pence, Kansas. Ore, 230, '88 (xviii).
- HART, WILLIAM R., Silverton, Colorado. Insects (four specimens). 179, '88 (x).
- HAVENS, Capt. JOHN G. W., Point Pleasant, New Jersey. Fish. 302, '88 (vii).
- HAZEN, FRED. K., Goffstown, New Hampshire. Stone implement. 149, '88 (xvi).
- HAZEN, WILLIAM, Covello, Columbia County, Washington. Pyrite crystals, sulphide of iron. 228, '88 (xviii).
- HEAD, W. H., jr., Cane River, Van Buren County, Tennessee. Iron pyrites in calcite. 214, '88 (xvi).
- HENRY, JAMES, Shingle, White County, Tennessee. Ores. 349, '89 (xviii).
- HERRON, Dr., Washington, District of Columbia. Tourmaline in quartz, from Maryland. 160, '88 (xviii).
- HIGHT, JAMES L., jr., Dallas, Georgia. Spear head. 422, '89 (iii).
- HIMROD, W. G., Havre de Grace, Maryland. Ore. 438, '89 (xviii).
- HINDE, HARRY H., Fort Smith, Arkansas. Insects. 193, '88 (x).
- HOLBERTON, WAKEMAN, New York City, New York. Painting, representing Black-spotted trout (male and female) and a Dolly Varden trout. (Returned.) 426, '89 (vii).
- HOOPER, JOSEPH, West Chester, Pennsylvania. Bird skin. (Borrowed for study and returned.) 161, '88 (v, a).
- HOVEY, GEORGE U. S., White Church, Kansas. Mineral. 459, '89 (xvi).
- HOY, Dr. P. R., Racine, Wisconsin. Plant. 255, '88 (xv); fresh-water sponge, 276 (22167), '88 (xi).

- HUNTINGTON, OLIVER B., Springfield, Utah. Minerals. 335, '89 (xvi).
- HURST, General H. P., Washington, District of Columbia. Plate of wrought iron penetrated by a bullet. 173, '88 (xviii).
- JACKSON, B. F., Athelstan, Arkansas. Stone pipe. 359 (21953), '89 (iii).
- JACKSON, W. R., Memphis, Tennessee. Ore from Polk County, Arkansas. 373, '89 (xviii).
- JARRETT, W. E., Edwards, Kentucky. Silver coin, Mexican, 8 reals, year 1818. 157, '88 (i).
- JESURUM, MORTIMER, Douglas, Wyoming. Fossil shell. 279, '88 (xiii, b).
- JOAB, C. W., Albany, New York. Minerals. 382, '89 (xvi); stone and flint implements, and human skull from a mound near Newark, Ohio. 382, '89 (iii); ethnological objects. 382, '89 (ii, a); palmated elk horns and leg of a panther. (Returned.) 382, '89 (iv); minerals. 395, '89 (xvi).
- JOHNSON, BEN, Stockton, Tooele County, Utah. Sand. 411, '89 (xviii).
- JOHNSON, F., Riverside, California. Bird skins. (Returned.) 394, '89, (v, a).
- Illinois State Laboratory of Natural History, Champaign, Illinois. Insects. (Returned.) 312, '88 (x).
- INGALLS, Hon. J. J., United States Senate, Washington, District of Columbia. Nickel ore. 207, '88 (xviii).
- KEESE, A. E. L., Washington, District of Columbia. Gold, silver, and copper coins and medals. (Returned.) 209, '88 (i).
- KELLER, C. E., Keller, West Virginia. Impure graphite. (Returned.) 239, '88 (xviii).
- KENNEDY, M., Amiens, Virginia. Ore. 317, '88 (xviii).
- KIDWELL, F., Harpers Ferry, West Virginia. Calcite. 364, '89 (xvii).
- KLOEBER, CHARLES E., jr., Washington, District Columbia. Siliceous hematite from Roanoke, Virginia. 247, '88 (xviii).
- KNAPP, L., Oulcott, New York. Bird skin. (Returned.) 137, '88 (v, a).
- LANSING, Prof. J. G., Theological Seminary, New Brunswick, New Jersey. Egyptian gold coin. (Returned.) 254, '88 (i).
- LAUDERDALE, A. N., Lampasas, Texas. Gnano. 358, '89 (xvii).
- LAWRENCE, GEORGE N., New York. Birds (three specimens), from Mexico. (Returned.) 377, '89 (v, a).
- LAWRENCE, Messrs. W. H. & Co., Denver, Colorado. Shellbark hickory nuts. 263, '88 (xv).
- LEARY, J. L., Thoroughfare, Virginia. Decomposed rock. 405, '89 (xviii).
- LEON, Dr. NICOLAS, Morelia, Mexico. Plant. 288, '88 (xv).
- LONG, VERNON, Paul Smith's, Franklin county, New York. Iron ore. 155, '88 (xvi).
- LE NORD, Dr. L. D., Mineral Springs, Arkansas. Fiber. 353, '89 (i).
- LERCH, Dr. OTTO, San Angelo, Texas. Iron ore, from Texas. 274, '88 (xviii).
- LOCKE, GEORGE, Libertyville, Illinois. Mineral, 191, '88 (xvi).
- LOOMIS, LOVERETT M., Chester, South Carolina. Raven. (Returned.) 375, '89 (v, a); bird skins. 315, '88 (v, a).
- LOUCKS, CASPER, York, Pennsylvania. Stone implements. (Returned.) 447, '89 (iii).
- LUCAS, Dr. H. S., Pine Mountain, Georgia. Rock. 307, '88 (xvii).
- LYNCH, JOHN, North Yakima, Washington. Ore. 312, '89 (xviii).
- McBRIDE, W. S., Marshalltown, Iowa, fragment of a skull. (Returned.) 413, '89 (iii).
- MCCAIN, I. G. & Co., Hot Springs, Washington. Water (for analysis). 204, '88 (xvi).
- MCCARTHY, JOHN, Hermosa, Dakota. Mineral. 412, '89 (xvi).
- MCCLELLAND, Dr. J. B., Pittsburgh, Pennsylvania. Pottery, from a well near Powhatan, Virginia. 245, '88 (ii, b).
- MCCONVILLE, D., Sixth Auditor, Treasury Department. Chert containing calcite. (Returned.) 234, '88 (xviii); iron ore, 213, '88 (xviii).
- MCDONALD, A. W., Berryville, Clarke County, Virginia. Ore from Blue Ridge mountains. 400, '89 (xviii).

- McGINNIS, WILLIAM H., Youngstown, Ohio. Stone implements. 208 (21212), '88 (III); plant. 208 (21212), '88 (XV).
- McILWRAITH, T., Cairnbrae, Hamilton, Ontario, Canada. Bird skins. (Returned.) 351, '89 (V, A).
- McSPEIDEN, T. G., Baltimore, Maryland. Ore, supposed to contain nickel. 281, '88 (XVIII).
- MACGILL, T. W., Franklin, Kentucky. Bog-ore, from Kentucky. 175 (21075), '88 (XVIII).
- MANGUM, Mrs. WILLIE, Washington, District of Columbia. Japanese coins. 303, '88 (I); Japanese coins. (Returned). 303, '88 (II, A); Chinese copper coins. 303, '88 (I).
- MARQUETTE, PETER J., West Fort Ann, New York. Minerals. 444, '89 (XVI).
- MILLER, F. S., Chillicothe, Missouri. Insect. 391, '89 (X).
- MIRICK, Miss NELLIE, Oneida, New York. Plant. 225, '88 (XV).
- MITCHELL, C. W., Lynchburgh, Virginia. Clays, colored by oxides of iron. 178, '88 (XVII).
- MOONEY, JAMES, Cherokee, North Carolina. Garnet. (Specimens sent for report as to value per ton.) 163, '88 (XVI); feldspar. 380, '89 (XVII).
- MORGAN, H. DE, New York City, New York. Collection of prehistoric antiquities, from America. 435, '89 (22,264) (III).
- MAY, W. R., Nephi, Utah. Bituminous carbonate of lime. (Borrowed for study.) 138, '88 (XVI).
- MAYOR, Mrs. MINNIE, Austin, Minnesota. Shell sinker. (Returned.) 366, '89 (III).
- MEAD, ALBERT D., Middlebury, Vermont. Black-throated warbler (skin); *Dendroica carulescens* (Returned). 159, '88 (V, A.) Bird skins and eggs. (Returned.) 324, '89 (V, A).
- MEDER, FRED., New York City, New York. Prints. (37), 446 (22 074), '89 (I).
- MEREDITH, JOSEPH, Rico, Colorado. Radius of a deer. 260, '88 (XII).
- MERRILL, Dr. J. C., U. S. Army, Frankfort Arsenal, Philadelphia, Pennsylvania. Rocks (three specimens) from the Boulder mining district of Montana. 222, '88 (XVII).
- MURRAY, JOHN, Sing Sing, New York. Rock. 248, '88 (XVII).
- MURRAY, R. R., Camp Supply, Indian Territory. Lava. 440, '89 (XVII).
- NEURLING, H., Milwaukee, Wisconsin. Bird skin. (Returned.) 410, '89 (V, A).
- NELSON CHRISTIAN, Virginia City, Montana. Minerals. 150, '88 (XVI).
- NEMEGUEL, B. M. DE, Independence, West Virginia. Larvæ of caterpillar. 198 (21211), '88 (X).
- NEWBERRY, Prof. J. S., Columbia College, New York. Cretaceous invertebrate fossil, from Weld County, Colorado. 186, '88 (XIII, B).
- NICKELL, L. A., Union, West Virginia. Iron pyrite, 366. '88 (XVIII).
- NICKERSON, GEORGE A., Plymouth, Massachusetts. Fish. 370, '89 (XII).
- NICKERSON SALT COMPANY, Nickerson, Kansas. Salt. 240, '88 [XVIII].
- NIVEN, WILLIAM, New York City, New York. Minerals and cut stones. 463, '89 (XVI).
- NOLTING, AUGUST H. jr., Brooklyn, New York. Beetle, *Monohammus confusor*. 156. (21094), '88 (X).
- OATES, M. T., and MORRIS, B. L., Rhome, Texas. Siliceous limestone. 166, '88 (XVIII).
- OBENDERF, JOHN L., Downeyville, Nye County, Nevada. Ore (two specimens). 184, '88 (XVIII).
- OTEX, PETER J., Lynchburgh, Virginia. Mole cricket. (Returned.) 318, '88 (X).
- PARKHILL, C. H., Cornwall, Vermont. Bird skins. (Returned.) 434, '89 (V, A).
- PARKS, HIRAM, McDonald, Tennessee. Iron ores. 212, '88. (XVIII).
- PATTERSON, Capt. J. H., U. S. Army, Fort McGinnis, Montana. Insect. 257, '88 (X).
- PATTON, W., Osceola, Missouri. Ore. 237, '88 (XVIII).
- PENDLETON, Dr. E. B., Berkeley Springs, West Virginia. False spikenard. (Borrowed for study.) 151, '88 (XV).

- PENNYPACKER, C. H., West Chester, Pennsylvania. Mineral. (Returned.) 190, '88 (XVI).
- PERRY, J. W., Kansas City, Missouri. Iron ores. 466, '89 (XVIII).
- PETERSON, G. H., Denver, Colorado. Plaster cast of a bronze coin of Augustus Caesar, Emperor of Rome. (Returned.) 286, '88 (I).
- PETTEBONE, PAYNE & SON, Wyoming, Pennsylvania. Worm-eaten ash handle. 433, '89 (X).
- PHILLIPS, JOHN W., South Oil City, Pennsylvania. Minerals. 378, '89 (XVI).
- PIKE, E. BERTRAM, Boston, Massachusetts. Siliceous sand. 340, '89 (XVII).
- POLING, OTHO C., Quincy, Illinois. Bird skins. (Returned.) 291, '88 (V, A.); bird skins. (Returned.) 311, '88 (V, A.)
- POLKINHORN, H. B., Charlottesville, Virginia. Galena. 293, '88 (XVI).
- PRICE, THOMAS H., Hyattstown, Maryland. Ores. 482, '89 (XVIII).
- PRINTUP, JOHN C., Rome, Georgia. Tripoli. 218, '88 (XVIII).
- PROCK, A. B., Osceola, Missouri. Hematite iron ore. 388, '89 (XVI).
- PUTNAM, Professor F. W., Peabody Museum, Cambridge, Massachusetts. Fire sticks of the Ainos, Bushmen, and Sonmalis. (Lent for drawing.) 145, '88 (II, A); fragments of bones of mammals. (Returned.) 294, '88 (XII).
- PRATT, N. P., Atlanta, Georgia. Corundum crystal. 407, '89 (29934).
- PRATT, W. E., Lake Forest, Illinois. Birds' eggs (three specimens). (Returned.) 345, '89 (V, B).
- PRESTON, E. D., U. S. Coast and Geodetic Survey. Lava from the Sandwich Islands. 360 (21704) '89 (XVII).
- PRICE, C. W., Chrome, Colorado. Fossil. 442, '89 (XIII, B).
- RABB, R. L., Paducah, Kentucky. Horny covering of lower jaw of a Loggerhead turtle. 242, '88 (XII).
- RAGSDALE, G. H., Gainesville, Texas. Bird skins (4 specimens). (Returned.) 148, '88 (V, A). Cretaceous fossils. (Returned.) 231, '89 (XIII, B.); skulls of Mole. 390, '89 (IV.); copper-head snake. 424, '89 (VI).
- RALSTON, THOMAS C., Fairbury, Nebraska. Ores. 195 '88 (XVIII).
- RANKIN, E. P., Jacksonville, Texas. Larva of moth. 224, '88 (X).
- RAWLINGS, L. A., Box-Elder, Colorado. Ores. 361, '89 (XVIII).
- RAY, MICA COMPANY, The G. D., Burnsville, North Carolina. Mica. 249, '88 (XVI).
- REDMAN, AMOS, Wellington, Virginia. Red hematite; an oxide of iron. 162, '88 (XVIII).
- REICHSTEIN, JACOB, Pittsburgh, Pennsylvania. Ore. 206, '88 (XVIII).
- REMUS, E., Aeton, California. Plant. 304, '88 (XV).
- RICHARDSON, MAX B., Oswego, New York. Indian clothing. 208 (21596), '89 (II, A).
- RICHARDSON, URIAH, Oakley, Logan County, Kansas. Magnetic iron sand. 226, '88 (XVI).
- RIDENOUR, WILLIAM B., Brooklyn, New York. Plant. 223, '88 (XVI).
- RINGHARTZ, THEO. VON, Middletown, Virginia. Quartz. 296, '88 (XVI).
- ROGAN, JAMES W., Rogersville, Tennessee. Insect. 452, '89 (X).
- ROGERS, Dr. C. F., Branbury, Texas. Teeth of fossil Ganoid fish. 352, '89 (VII).
- ROGERS, O. F., Kingston, New Mexico. Ore. 309, '88 (XVIII); ore. 323, '89 (XVIII).
- ROTCHFORD, Mrs. H. J., Woodland, New York. Larvæ of insects. 136, '88 (X).
- SAGAR, ANDREW J., Saumsville, Virginia. Mineral. 475, '89 (XVI); minerals. 427, '89 (XVI).
- SALT, E. M., Bath, New York. Plant. 355, '89 (XV).
- SANDOS, Mr. W. A., Opelousas, Louisiana. Insect. 401, '89 (X).
- SAUNDERS, JOHN P., Elizabeth, West Virginia. Iron ore. 389, '89 (XVIII).
- SCOTT, MARY P., Sioux City, Iowa. Clay marl, from Iowa. 201, '88 (XVII).
- SCOTT, W. W., Canal Dover, Ohio. Stone with carving of human face. (Returned.) 436, '89 (III).
- SEARCY, F. D., Seattle, Washington. Photographs of deer. 310, '88 (IV).

- SECRET SERVICE DIVISION, Treasury Department. Photographs (Fifty) of counterfeiters. 143, '88 (20,926), (1).
- SENNETT, GEORGE B., American Museum of Natural History, New York. Birds (three specimens), from Mexico. (Returned). 316, '88 (v, A); bird. (Returned.) 430, '89 (v, A). \*
- SHEDD, Rev. J. H., Marietta, Ohio. Oriental seals, gems, and coins. 344, '89 (1).
- SHERIDAN, JOHN, Pioche, Nevada. Samples of rock and mineral. 414, '89 (xvi).
- SHERRATT, W. J., Philadelphia, Pennsylvania. Cape May Warbler. (Returned.) 330, '89 (v, A).
- SHIPLEY, A. B. & Son, Philadelphia, Pennsylvania. Insect. 176, '88 (x).
- SMALLEY, C. W., Russell Springs, Kansas. Slag. 235, '88 (xviii); lignite. 402, '89 (xviii).
- SMILLIE, Miss L. E., Washington, District of Columbia. Doilies (twelve), decorated by platinotype. 142, '88 (20925), (1).
- SMITH, H. G., Jr., Denver, Colorado. Reptiles, from Colorado. (Returned.) 368, '89 (vi).
- SMOCK, Prof. J. C., State Museum, Albany, New York. Serpentine. (Returned.) 347, '89, (xvii).
- SNEED, S. G., Austin Texas. Swallow-tailed butterfly. 259, '88 (x).
- SNOW, Prof. F. H., Lawrence, Kansas. Insects. 253, '88 (x).
- STEELE, JOHN G., Rock Hill, South Carolina. Mineral. 423, '89 (xvi).
- STRANAHAN, J. J., Chargin Falls, Ohio. Catfish. 275, '88 (xii).
- STOLL & THAYER, Los Angeles, California. Plant. 481, '89 (xv).
- STOLLEY, OTTO, Double Horn, Texas. Insects. 372, '89 (x).
- STRONG, J. E. P., Castanea, Clinton County, Pennsylvania. Wood and seed-pods. 418, '89 (xv).
- STRONG, W. F., Washington, District of Columbia. Bronzite. 174, '88 (xviii).
- SUMMERLIN, M. C., Lowell, Georgia. Glass. (Returned.) 158, '88 (xvi).
- SWAN, JAMES G., Boston, Massachusetts. Fungus. 170, '88 (xv).
- TAYLOR, F. W., Kingston, New Mexico. Rock specimens. 333, '89 (xvii).
- THOMPSON S. S., Denison, Texas. Crude petroleum. 187, '88 (xviii).
- THORN, E. P., Youngstown, Ohio. String of beads, from the Sandwich Islands. 250, (21315), '88 (ii, A).
- TIBBITS, J. H., San Diego, California. Ore. 461, '89 (xviii).
- TODD, JOHN F., Gove City, Kansas. Gravel. 386, '89 (xvi).
- TOMASON, THOMAS, Presidio, Texas. Desert horned lark. 287, '88 (v, A).
- TOMLINSON, I. J., Battle Creek, Michigan. Wild corn, from Idaho. (Returned.) 168, '88 (xv).
- TOWNSEND, CHARLES H., U. S. Fish Commission steamer *Albatross*. Mexican spider-monkey: *Ateles vellerosus* (living specimens). 144, '88 (20927) (xix).
- TREACLE, E. M., Versailles, Missouri. Siliceous limestone. 264, '88 (xvii).
- TRISTRAM, Rev. H. B., The College, Durham, England. Bird skins. (Returned.) 334, '89 (v, A).
- VANCE, Hon. R. B., Assistant Commissioner of Patents, Department of the Interior. Washington, District of Columbia. Crystallized quartz (2). 273, '88 (xvi).
- VERY, C. F., New Albany, Indiana. Stone implements. 313 (21518) '88 (iii).
- VILAS, J. C., Livingston, Park County, Montana. Minerals. 477, '89 (xvi); minerals. 450, '89 (xvi).
- VOORHEES, J., Wolverton, Minnesota. Limestone. 362, '89 (xvii).
- WALKER, ADAM S., St. John, Utah. Bituminous shale. 292, '88 (xvi).
- WALKER, JOHN, Muldon, Mississippi. Bird. 462, '89 (xii).
- WARD, Dr. W. S., Plantsville, Connecticut. Arrow-points (8 specimens). (Returned.) 200, '88 (iii).
- WARREN, Dr. B. H., West Chester, Pennsylvania. Bird skins from Florida and Pennsylvania. (Returned.) 290, '88 (v, A).



- WATKINS, GEORGE W., Moriah, Essex County, New York. Mineral. 437, '89 (XV).
- WEBB, JOHN S., Disputanta, Virginia. Molar tooth of a Mastodon. 232, '88 (IV).
- WERTH, J. M., Stockton, Henry County, Virginia. Metal. 354, '89 (XVIII).
- WESTCOTT, O. I., Maywood, Illinois. Insects, (borrowed for study and returned). 246, '88 (X).
- WETMORE, J. F., Albany, New York. Shrub. 177, '88 (XV).
- WHEELER, M. V., Clayton, West Virginia. Blue limestone. 189, '88 (XVII).
- WHEELER, WILLIAM M., secretary Public Museum, Milwaukee, Wisconsin. Bird. (Returned.) 336, '89 (V, A).
- WHITE, JOHN C., Brisbee, Arizona. Obsidian. 305, '89 (XVIII).
- WHITTEN, DR. W. A., Moline, Mississippi. Carbonate of lime. 165, '88 (XVI).
- WILCOX, JOSEPH, Philadelphia, Pennsylvania. Fossil shells, from Florida. 453, '89 (IX).
- WILLIAMS, W. C., Batesville, Arkansas. Plant. 252, '88 (XV).
- WILLIAMS, W. W., Washington, District of Columbia. Quartz stained by iron, from Montgomery County, Maryland. 205, '88 (XVIII); iron ores. 210, '88 (XVIII).
- WILVERT, EMIL, Sunbury, Pennsylvania. Ore. 258, '88 (XVIII); zinc ore. 270, '88 (XVIII); White pig-iron. 284, '88 (XVIII).
- WINCHESTER, B. F., Frederick City, Maryland. Plant. 461, '89 (XV).
- WITHERS, J. E., Henderson, Kentucky. Magnetite sand. 417, '89 (XVIII).
- WOFFORD, J. L., Nashville, Tennessee. Clay. 202, '88 (XVIII).
- WORTHEN, CHARLES K., Warsaw, Illinois. Mammal skins. (Part returned.) 350 (21868), '89 (IV); mammal skins. (Nine; three retained, six returned.) 383 (21863), '89 (IV); mammal skins and skulls. 451, '89 (IV).
- YOUNGLOVE, JOHN E., Bowling Green, Kentucky (through Tiffany & Co., New York). Carving of a head and hand in stone. 236 (21402), '88 (III).

The index appended shows the geographical sources of the material sent to the National Museum for examination and report.

## AMERICA.

	Number of lot.	Total.
North America:		
Canada .....	351, 369 .....	2
Mexico .....	288, 456 .....	2
United States:		
Alabama .....	449, 478 .....	2
Arizona .....	169, 305, 465 .....	3
Arkansas .....	185, 193, 227, 252, 256, 353, 359 .....	7
California .....	172, 180, 295, 304, 443, 461, 481 .....	7
Colorado .....	179, 260, 261, 263, 272, 280, 285, 286, 331, 368, 334, 442 .....	12
Connecticut .....	200, 300, 399, 428 .....	4
Dakota .....	326, 412 .....	2
District of Columbia .....	141, 173, 174, 209, 210, 238, 303, 328 .....	8
Florida .....	244, 277, 409 .....	3
Georgia .....	158, 218, 307, 407, 422 .....	5
Idaho .....	415 .....	1
Illinois .....	171, 191, 233, 246, 291, 311, 312, 345, 350, 357, 383, 429, 451 .....	13
Indiana .....	213, 313 .....	2
Indian Territory .....	440, 470 .....	2
Iowa .....	201, 267, 413 .....	3
Kansas .....	196, 197, 207, 211, 215, 226, 230, 235, 240, 251, 253, 386, 402, 450, 471 .....	15

## AMERICA—Continued.

	Number of lot.	Total.
United States:—Continued.		
Kentucky .....	157, 175, 242, 285, 417.....	5
Louisiana .....	229, 401, 445.....	3
Maryland .....	160, 205, 281, 337, 342, 356, 438, 464, 482.....	9
Massachusetts .....	145, 181, 192, 220, 294, 310, 370.....	7
Michigan .....	167, 168, 301, 394.....	4
Minnesota .....	366, 381.....	2
Mississippi .....	165, 182, 462.....	3
Missouri .....	237, 264, 371, 388, 391, 420, 432, 455, 466, 470.....	10
Montana .....	146, 150, 164, 222, 257, 416, 450, 477.....	8
Nebraska .....	195.....	1
Nevada .....	184, 414.....	2
New Hampshire .....	149.....	1
New Jersey .....	254, 302, 374.....	3
New Mexico .....	309, 314, 323, 333, 348.....	5
New York.....	136, 137, 147, 155, 156, 163, 177, 186, 188, 223, 225, 248, 289, 306, 308, 316, 319, 339, 346, 347, 355, 377, 380, 392, 395, 408, 426, 430, 433, 435, 437, 444, 446, 463, 468, 469, 474.....	37
North Carolina .....	154, 199, 241, 243, 249, 273, 457, 479.....	8
Ohio .....	139, 208, 234, 250, 275, 344, 436, 480.....	8
Oregon .....	439.....	1
Pennsylvania .....	161, 176, 190, 206, 245, 258, 270, 278, 284, 290, 297, 299, 327, 330, 332, 378, 379, 396, 397, 412-418, 447, 453.....	23
South Carolina .....	262, 271, 315, 375, 423.....	5
Tennessee .....	140, 202, 212, 214, 219, 236, 265, 329, 349, 373, 441, 452, 458.....	13
Texas.....	148, 166, 187, 224, 231, 241, 259, 269, 274, 282, 283, 287, 343, 352, 358, 372, 387, 390, 398, 403, 424, 425, 431, 448, 454, 473, 476....	27
Utah .....	138, 292, 325, 335, 376, 411.....	6
Vermont.....	159, 324, 393, 434.....	4
Virginia .....	162, 178, 183, 184, 194, 203, 216, 221, 232, 247, 293, 296, 317, 318, 320, 354, 365, 400, 405, 427, 475.....	21
Washington .....	170, 204, 228, 310, 321.....	5
West Virginia.....	151, 152, 153, 189, 198, 239, 266, 298, 322, 364, 367, 389, 404, 460, 467.....	15
Wisconsin.....	255, 276, 336, 410.....	4
Wyoming Territory .....	279, 419.....	2
West Indies .....	268.....	1
South America:		
Brazil.....	363, 406.....	2

## EUROPE.

England .....	334.....	1
Norway .....	217.....	1

## OCEANICA.

Polynesia:		
Sandwich Islands.....	360.....	1

## I.—CO-OPERATION OF THE DEPARTMENTS AND BUREAUS OF THE GOVERNMENT.

The National Museum has continued to enjoy the friendly co-operation of the departments and bureaus of the Government, and many of them have contributed very liberally to the collections of the Museum during the year. In addition to the contribution of specimens, a wide interest in the affairs of the Museum has been manifested. The most extensive aid to the Museum, as far as the receipt of collections is concerned, has been rendered by the U. S. Geological Survey, whose work is in many ways closely allied to that of the Museum. The co-operation of officers of the War and Navy Departments has been especially conspicuous and gratifying, and the Department of State, particularly through the agency of its consuls, has contributed largely to the interesting material received during the year.

### DEPARTMENT OF STATE.

Hon. T. F. Bayard, Secretary of State, sent photographs of Indians of the Goajira Peninsula, which forms the extreme northwestern part of Venezuela.

Hon. A. L. Rives, First Assistant Secretary of State, sent a collection of water-color sketches and photographs of Samoan scenery and life.

Iron ore, coal, coke, and specimens of shale from Brazil were received through Hon. A. A. Adee, Assistant Secretary of State.

A valuable and interesting collection of textile fabrics of wool, worsted, silk, cotton, mohair, and alpaca was received through Hon. William Grinnell, United States consul, at Bradford, England.

Twenty-four specimens of ores were transmitted by Hon. Otto E. Reimer, United States consul at Santiago de Cuba.

Consul Mason, at Marseilles, sent an interesting series of samples of ramie.

The United States consul at Sydney, New South Wales, sent samples of Australian wool.

A package of engravings illustrating the breeds of foreign cattle, sheep, and swine, were received from Mr. J. Fenner Lee, chief clerk.

Through the courtesy of the Department facilities have been extended to collectors for the National Museum by means of letters of introduction to ministers and other officials in the countries to be visited, and in other ways.

### TREASURY DEPARTMENT.

The Treasury Department has bestowed the usual courtesies in passing, free of entry, material sent from abroad and intended for the Smithsonian Institution and the National Museum. The thanks of the

Museum are due to the Department for its friendly offices in affording facilities to collectors and explorers in behalf of the Museum. The Light-House Board, the Life-Saving Service, the U. S. Coast and Geodetic Survey, and the Revenue Marine Division have each contributed interesting specimens to the Museum, and have in various ways facilitated the work of some one or more of the departments in the Museum.

*Life-Saving Service.*—Hon. S. I. Kimball, Superintendent of the Life-Saving Service, has aided the Museum by giving instructions to the keepers of Life-Saving stations to forward to the Museum any marine specimens captured in their vicinity which might be desired. As a result of this co-operation the following material has been received: A fresh specimen of Sowerby's whale (*Mesoplodon bidens*), from Capt. J. L. Gaskill, keeper of the Absecom Life-Saving station, Atlantic City. William H. Gaskill, keeper of the Cape Lookout Life-Saving station, North Carolina, transmitted a fresh specimen of Sunfish (*Mola mola*).

*Light-House Board.*—A collection of blue prints of lamps and flames, illustrating the illuminating system of the Light-House Service, was sent, at the request of the Museum, for exhibition at the Cincinnati Exposition, and formed an important feature of the photographic exhibit of the Museum on that occasion. W. M. Quinn, keeper of the Cape Sanblas Light-House station, Florida, sent a collection of turtles.

*Revenue Marine Division.*—A valuable and interesting collection of photographs of the natives and scenery of Alaska, taken by the officers of the revenue steamer *Bear*, was lent to the Museum by Mr. Peter Bonnett, chief of the division.

*Secret Service Division.*—A collection of photographs of counterfeiters was, through the kindness of Mr. John S. Bell, chief of the division, lent to the Museum for exhibition at Cincinnati, for the purpose of illustrating the uses to which photography had been applied in connection with the requirements of the Government service.

The Commissioner of Internal Revenue, Mr. J. S. Miller, presented two living Black bears from West Virginia.

Dr. J. W. Jewett, examiner of drugs, Custom-House, New York City, sent a collection of drugs.

*U. S. Coast and Geodetic Survey* presented a series of photographs, showing the methods of mounting photographic exhibits. Specimens of marine invertebrates, fishes, mollusks, and insects collected at Cape Sable, Florida, were transmitted to the Museum.

Several specialists engaged in making collections for the Museum have, through the courtesy of the Superintendent of the Coast Survey, been supplied with charts of the regions along the coast to be explored.

#### WAR DEPARTMENT.

The Museum has received valuable aid from this Department in many ways, especially through the Quartermaster's Department of the Army.

Through its medium collections of living animals and other objects intended for the Museum have been promptly forwarded, which might have been injured by the ordinary methods of transportation.

Six photographs of Hell Gate explosion were sent by Maj. W. R. King, Willetts Point, New York, for exhibition at the Cincinnati Exposition.

Dr. Edgar A. Mearns, U. S. Army, Fort Snelling, Minn., sent a small collection of reptiles, fishes, and batrachians from Arizona.

Dr. J. L. Wortman, U. S. Army Medical Museum, presented four living rattlesnakes and a Bee-eating buzzard.

Lient.-Col. S. C. Kellogg, U. S. Army, deposited a buffalo robe.

Dr. John S. Billings, Curator of the Army Medical Museum, presented specimens of pottery and stone implements from old graves in the mountains near Lima, Peru, and three pieces of pottery from Ancon, Peru.

Dr. R. W. Shufeldt, U. S. Army, stationed at Fort Wingate, New Mexico, presented the following specimens: a hawk, a long-billed marsh wren, a living rattlesnake, a pigeon hawk, field mice and pocket mice, two bird skins, eight batrachians, and a skin of a western red-tailed hawk.

Capt. Charles E. Bendire, U. S. Army, has continued his valuable service as Honorary Curator of the collection of birds' eggs.

*U. S. Signal Office.*—General A. W. Greely, Chief Signal Officer, sent a specimen of flexible sandstone, collected by the signal observer at Charlotte, North Carolina. A Secchi meteorograph and two sections of Beek's pantograph, and Myers' autograph telegraphic instrument were deposited in the Museum, and have been added to the collection of scientific apparatus. Photographs of meteorological records were contributed to the exhibit of photography prepared by the Museum in connection with the Cincinnati Exposition. Through the kindness of the Chief Signal Officer a large number of correspondents and collaborators of the Museum have been supplied with Mr. Lucian M. Turner's "Contributions to the Natural History of Alaska."

#### NAVY DEPARTMENT.

The principal accession has been a collection of fifty-nine mounted birds, transmitted by the U. S. Naval Academy, at Annapolis, Md.

Several pieces of bronze and copper from the Washington Navy-Yard were obtained through the kindness of Commodore M. Sicard, Chief of the Bureau of Ordnance.

The Ordnance Office of the Naval Academy sent, through Lient. Albert Gleaves, several photographs of a projectile in flight from a Hotchkiss magazine-rifle.

Through the courtesy of Commander C. F. Goodrich, several photographs of torpedo experimental work were obtained.

At the request of the Museum, Lieut. George L. Dyer, hydrographer, furnished a copy of the British admiralty chart, and also charts of Queen Charlotte Islands, Hecate Straits, and Dixon Entrance, for use in the Ethnological Department of the Museum.

Dr. J. M. Flint, U. S. Navy, has contributed valuable services as Honorary Curator of the section of *Materia Medica*.

#### DEPARTMENT OF THE INTERIOR.

*U. S. Geological Survey.*—The Museum acknowledges with gratitude and pleasure the valuable assistance of the Survey, whose operations are in many respects closely related to the work of the Museum. The researches of the geologists connected with the Survey are of especial value by reason of the large collections which are made, and which after being worked over and described are transferred to the Museum collections. The past year has been, perhaps, as notable as any in the acquirement by the Museum of valuable and interesting collections from this source, as will be seen from the appended statement.

The U. S. Geological Survey presented several pieces of Indian pottery, and a number of stone relics found in Prentiss County, Mississippi; a specimen of native platinum from Washington Territory; rock specimens from California, collected by J. S. Diller; a large collection of rocks (comprising about 2,000 specimens) of the Comstock Lode and Washoe District, Nevada, gathered by S. F. Emmons and G. F. Becker. This collection is more fully described in Mr. Becker's report of the geology of this region (Monograph III, U. S. Geological Survey), and also in Messrs. Hague and Iddings's paper on the Development of Crystallization in Igneous Rocks (Bulletin U. S. Geological Survey, No. 17); a collection of minerals, made by Dr. W. F. Hillebrand from various localities; a mineral from Yellowstone National Park, Wyoming, collected by Walter H. Weed; a collection of 1,371 minerals, collected by S. L. Penfield in St. Lawrence, Lewis, and Jefferson Counties, New York, embracing fluorite, pink tremolite, blue calcite, graphite, tourmaline, talc, pyrite, etc.; minerals from Bisbee, Arizona, collected by Dr. W. F. Hillebrand; mineral specimens collected by Dr. W. F. Hillebrand in Arizona, Dakota, and New Mexico; mineral specimens (87) from Las Cruces, New Mexico, collected by Dr. W. F. Hillebrand; minerals from Utah and New Mexico; minerals from Colorado; specimens of Oriskany (drift) fossils from Potomac River, below Washington, District of Columbia; rocks and soils from various localities; a large collection of geological specimens from Arizona, Utah, and California, collected by Mr. J. S. Diller; a specimen of gntermanite containing zunyite, from Silverton, California, sent through Dr. W. F. Hillebrand; specimens of the trachyte body near Rosita, in the Silver Cliff region of Colorado, collected by S. F. Emmons; specimens (37) of wood opal from the Madison River, Montana, collected by Dr. A. C. Peale; specimens (804) of Lower Cambrian fossils, from Conception Bay, Newfoundland, collected by C. D. Walcott; specimens (3) of Lower Cambrian fossils from New York, Nevada, and Vermont, collected by C. D. Walcott; minerals from Colorado, collected by L. G. Eakins; specimens (3,240) of Middle Cambrian fossils from Conception Bay, Newfoundland; minerals from Montana, collected by Dr. A. C. Peale; specimens (39) of trimmed rocks from the Trias of the New Jersey region, collected by Nelson H. Darton; mineral specimens (139) collected in Colorado by Messrs. Cross and Hillebrand; Miocene fossils from New Jersey marls; specimens (24) of crystallized trona, from Dr. T. M. Chatard; a specimen of infusorial earth from Patuxent River, near Dunkirk, Maryland.

The Director of the Geological Survey has, on several occasions, extended very important assistance to the geological departments of the Museum, and has inspired the geologists of the Survey in the matter of advancing the interests of the Museum in every possible way, both in connection with their field-work and while on duty in Washington.

Several officers of the Geological Survey are officially connected with the Museum in the capacity of honorary curators of collections. These are Dr. C. A. White, in charge of Mesozoic fossils; Mr. C. D. Walcott, in charge of Paleozoic fossils; Mr. William H. Dall, in charge of mollusks and tertiary fossils, with Dr. R. E. C. Stearns as adjunct curator; Prof. O. C. Marsh, in charge of vertebrate fossils; Mr. Lester F. Ward, in charge of fossil plants; Prof. F. W. Clarke, in charge of minerals. To all of these gentlemen the National Museum offers its sincere thanks for their services during the year.

*U. S. Patent Office.*—Through the Commissioner of Patents were received specifications and patents illustrating the development of photography and the graphic arts in the United States and in Germany.

*Bureau of Education.*—Hon. N. H. R. Dawson, Commissioner, presented to the Museum a series of very interesting publications relating to the subject of American educational history.

#### DEPARTMENT OF JUSTICE.

Col. Cecil Clay, chief clerk, collected in Canada and presented to the Museum the skin and skeleton of a full-grown moose.

#### POST-OFFICE DEPARTMENT.

By the direction of the Postmaster-General, the Superintendent of the Dead-Letter Office has been requested to inform the Museum of the receipt in his office of specimens which might be of value to the Museum collections.

#### DEPARTMENT OF AGRICULTURE.

Four departments of the Museum are under the charge of specialists connected with the Department of Agriculture; namely, the Section of Forestry, Dr. B. E. Fernow, Honorary Curator; Department of Insects, Prof. C. V. Riley, Honorary Curator; Department of Botany, Dr. George Vasey, Honorary Curator; and the Section of Foods, Prof. W. O. Atwater, Honorary Curator.

The Division of Entomology sent, through Prof. C. V. Riley, a collection of insects, principally coleoptera from Michigan.

The Bureau of Animal Industry transmitted, through D. E. Salmon, chief of Bureau, a collection of parasites prepared by Dr. Cooper Curtice.

The Division of Ornithology and Mammalogy sent, through Dr. C. Hart Merriam, collections of mammal skins and skulls, from Florida

and California. Dr. Merriam also presented a valuable collection of birds' skins from the old world.

The Secretary of Agriculture has expressed his willingness to co-operate with the Museum in the establishment of a Department of Forestry, and, as already stated, the collection will be under the charge of Dr. B. E. Fernow.

The Department purchased from Dr. Taylor Townsend a large series of insects. This has been incorporated in the Museum collection.

Through the courtesy of the Secretary of Agriculture, Dr. George Vasey has been appointed Honorary Curator of the Department of Botany in the National Museum, in connection with his duties as botanist of the Department of Agriculture.

#### UNITED STATES FISH COMMISSION.

The chief source of material contributed during the year by the Fish Commission has been from the cruise of the U. S. Fish Commission steamer *Albatross* in the West Indies and on the Pacific coast. The most important accessions to the Museum resulting from the expedition are: a large collection of geological and archaeological specimens, coins, mammals, reptiles, batrachians, insects, arachnids and myriopods, birds' eggs, skeletons of birds, mammals, fossils, plants, lichens, mosses, fungi, and fossil woods. These were collected during the voyage from Norfolk, Virginia, to California, in 1887 and 1888. A collection of birds, reptiles, stone implements, plants, ethnological objects, and fossil woods was gathered in Alaskan waters. Several reports on these collections are being prepared by curators in the Museum and will be published as separate papers, forming parts of Vol. XII, Proceedings of the National Museum. These will be issued in advance of the bound volume.

The Commission also transmitted to the Museum twelve living elephant tortoises from the Galapagos Islands, seven living amblystomas, three painted terrapins, and three specimens of sting-ray fish (*Trygon centura*) from Chesapeake Bay; a collection of fishes made by Prof. C. H. Gilbert and Dr. J. A. Henshall, from the tributaries of the Ohio River; three Marble cat-fish, collected by Mr. Rogan, of Russellville, Tennessee, through Col. Marshall McDonald, U. S. Commissioner, two living opossums, and six living turtles; a skin and skeleton of Spotted porpoise, collected by the Fish Commission schooner *Grampus*.

Mr. J. Frank Ellis presented four living alligators from Tampa, Florida.

The valuable services of Mr. Richard Rathbun, as Honorary Curator of Marine Invertebrates; Dr. T. H. Bean, as Honorary Curator of Fishes; and Capt. J. W. Collins, as Honorary Curator of Naval Architecture, have been continued through the courtesy of the Commissioner, and a grateful acknowledgment of the same is here made.



*Bureau of Ethnology.*—Through the courtesy of the Director, Maj. J. W. Powell, the Department of American Prehistoric Pottery in the National Museum, which was established several years ago, was placed under the direction of Mr. W. H. Holmes, who has since acted as Honorary Curator. Through his efforts this department has attained a prominent place in the development of the work of the National Museum.

During the year the following collections of pottery, stone implements, woven fabrics, shells-beads, etc., were transferred to the Museum by the Bureau of Ethnology:

W. W. Adams sent shell beads from Union Springs, New York; E. Bohan, pottery from Mexico; Arthur P. Davis, pottery from Pueblo Alto, New Mexico; Gerard Fowke, pottery from Yellow Lake, Wisconsin; Dr. L. W. Gill, stone objects from Chain Bridge, Virginia; William A. Hakes, pottery fragments and stone objects from Susquehanna Valley, New York; H. P. Hamilton, pottery fragments from Two Rivers, Wisconsin; H. W. Henshaw, one medicine stone collected by L. L. Frost, Susanville, California; W. H. Holmes, pottery and stone objects from New Mexico; G. H. Hurlbut, woven fabrics from Ancon, Peru; C. C. Jones, pottery fragments from Stalings Island, Georgia; James D. Middleton, pottery fragments from Irvineton, Pennsylvania; Maj. J. W. Powell, pottery and stone objects from near Abiquiu, Mexico; James Stevenson, pottery from Moki, Arizona, eight hundred and fifty-one specimens of pottery, stone, and other objects from New Mexico, sixty-eight specimens of stone, implements from Moki, Arizona, one stone ball from James Springs, New Mexico, thirty-two specimens from Flagstaff, Arizona; Dr. Taylor, pottery fragments from near Mobile, Alabama; General G. P. Thurston, pottery fragments from suburb of Nashville, Tennessee; James P. Tilton, pottery fragments from Newburyport, Massachusetts; Charles L. R. Wheeler, one cast of stone knife from Westchester County, New York. Through James Mooney, a collection of ethnological specimens from the East Cherokee Reservation, North Carolina; fragments of pottery from New Mexico, collected by Maj. J. W. Powell; pottery from James Valley New Mexico, collected by W. H. Holmes; pottery from Irvington, Warren County, Pennsylvania, collected by James D. Middleton; fragment of pottery from Yellow Lake, Burnet County, Wisconsin, collected by Gerard Fowke; pottery and modern Cherokee work from the East Cherokee Reservation, North Carolina, collected by James Mooney; fragments of pottery from Pueblo Alto, New Mexico, collected by Arthur P. Davis; pottery from Oraibi Moki, Arizona, collected by Victor Mindeleff.

#### J.—EXPLORATIONS.

The collections of the National Museum have received valuable additions through the co-operation of several gentlemen who have offered

to make special researches in its behalf, or who have allowed the Museum to share the results of their explorations. The most important of these are here briefly referred to.

Early in the present year Mr. Talcott Williams, of Philadelphia, visited the northern part of Africa, and kindly offered in behalf of the Smithsonian Institution to make special inquiries in regard to the civilization of the modern Arab and the natural history of the region; also to collect linguistic specimens. His plan was to go direct to Tangiers, thence to Fez and Mequinez, continuing, if possible, as far as Mogador and Morocco. Mr. Williams's knowledge of the Arabic language aided him greatly in his investigations in the country, and through his endeavors the Institution will no doubt obtain collections, as well as information, of extreme value. Botany, geology, and archæology are the special studies to which Mr. Williams intends to devote himself. At the time of his arrival the North African flora was in flower, and, as his plan was to travel for two or three weeks on horseback, his opportunities in the first direction were excellent. The geology of north Africa is imperfectly represented in the National Museum, therefore characteristic rocks and photographs of features of physical geology will be of great value. The archæology of this region is, however, the subject of the highest importance to the Smithsonian Institution, and to which Mr. Williams has promised chiefly to direct his attention. He hopes to visit El Kutel, one of the most striking monolithic remains in north Africa, and other interesting ruins. He has been furnished with a photographic outfit, photographs and measurements being particularly desired. He has been provided with a complete outfit of instruments for taking observations of temperature and altitudes. A preliminary report of the work accomplished has been received in the form of a letter to the Secretary of the Smithsonian Institution, and is here printed :

TANGIERS, MOROCCO, *June 17, 1889.*

SIR: I have the honor to make a preliminary report upon the commission intrusted to me in Morocco.

(1) The collection of musical instruments of north Morocco is, I trust, complete. It includes every instrument in use, making six stringed instruments, six wind, and four of percussion, with varieties of each ranging from the rudest bayi whistle to stringed instruments which require the utmost skill in manufacture. In each instrument the native name and the native names of all its parts have been noted, the pitch of each string in the stringed and the range of each wind instrument, as tuned and played by professional native musicians, has been taken and the air and melody of a native tune played on each instrument has been noted by a competent musician in our own musical notation.

Aside from this incidental contribution to folk music I know no instance where a museum catalogue or label gives the particulars I have mentioned of Oriental musical instruments.

(2) With reference to the Arab tent, I found, after careful examination, that the Arab tribes whom I visited have been so altered by a semi-sedentary life, living half and sometimes all the year in one place, and raising grain, that a tent would be misleading and reflect only the current agricultural life of this country. I therefore did

not procure one. The fringe of unsettled region which separates the true Arab from settled regions is here a wide one, and this plan of the Museum, which is altogether feasible, can only be carried out at some point like Aden and the upper Nile, say at Wady Halfa-Tripoli or near the present work of the Babylonian Expedition, of Pennsylvania University, where the true nomad Arab is within a few hours of an American agent. Modification in this type is in rapid progress, and in a few years it will be too late.

(3) I have been able to find but one book in the Berber language in the possession of an European. Nearly every one, including native scholars and European residents of long standing, have told me that they have never heard of one. The utmost I have been able to secure is a leaf or two of an old Berber manuscript on Moslem law, which is, I think, unique.

(4) A large share of my purchases has therefore been of "simple utensils." A full list, giving in each case the native name of each article, will be transmitted later. The chief objects I have sought to illustrate are, in brief—

The lamp in ordinary use here is the "Roman lamp" form, and I have this from a rude metal up through a series of elaborate brass forms.

Fires are built in small pots. These range from earthenware shaped by hand, through successive additions to a tall iron stove.

The preparation of food is illustrated among other phases by a complete set with samples of the plant used in making cooscoosu, the national dish.

The ground palm, *Chamwrops humile*, plays a most important part in domestic economy, nowhere noted, and this is illustrated in all stages of its leaf and fiber.

Comb manufactures, giving carpenter's tools, form a single compact exhibit with photographs, and this is supplemented by a primitive lathe.

The Fry pottery offers an unusual instance of a local pottery unaffected by modern methods, and a full set of its patterns are included.

There are also a number of lesser articles, of which an interesting one is the survival of the wooden sword, unnoticed by any previous traveler.

Three costumes have been purchased: (1) Fry woman; (2) mountaineer man; (3) mountaineer woman.

In each case the native name of each article is noted, an omission which robs many museum costumes of an important linguistic value.

I send in addition three hundred species of flowering plants and fossils from three localities, from none of which have they been collected before.

A small shipment was made from Teheran and another from here will be sent later of seven boxes and one bundle, the invoice\*, etc., of which I have transmitted to Mr. G. Brown Goode.

\* Invoice No. 7.—Shipped to Smithsonian Institution, Washington, D. C., U. S. A.

From Teheran—

1 Hat.....	\$0.60
1 Snuff-box .....	1.00
1 Palmetto prayer-mat .....	.15
1 Ood, musical instrument.....	2.00
1 Giubrede.....	.40
1 Giubrede.....	.60
1 Rabab and parts of Giubrede .....	2.00
2 Snuff-boxes .....	.10
Duboga-folley drum .....	.25
2 Candle-sticks.....	.04
1 Plow-yoke .....	3.00

10.14

The list which I will also send later will give careful notes on each article. The notes on the musical instruments may not be sent until I return.

When transportation, etc., is paid, the sum in my hands will be exhausted, and an account of the same will be duly transmitted.

I am, very respectfully, yours truly,

TALCOTT WILLIAMS.

Hon. S. P. LANGLEY,

*Secretary of the Smithsonian Institution.*

At the request of Mr. Williams the examination of the contents of his collections will be deferred until he arrives. In the next report a complete list of the collection will probably be published.

Mr. W. W. Rockhill, formerly of the American Legation of Peking, has recently undertaken a journey through Thibet, with a view to making a special study of the ethnology of that region, having already made himself familiar with the customs of the natives. The Smithsonian Institution has supplied him with a barometer and other instruments desired by him for his journey. His previous investigations have resulted in an exceedingly valuable collection of objects, illustrating the religious occupations and amusements of the various peoples in different parts of China, Thibet, and Turkestan. Among those from Thibet are a number of prayer-wheels, a divination bowl made from a human skull, a sprinkler for holy water, a Lama's drum, a bell and score-book used in religious worship, an exercising flute made from a human femur, a rosary of one hundred and eight beads made from bones of human skulls, a charm box and sacred books, images and scroll pictures of gods. From Western China and Mongolia are carved rosaries, and figures of gods supposed to preside over medicines, riches, etc. From Northern Turkestan is a scroll picture showing the occupations and sports of the people.

Dr. James Grant Bey, who some years ago established a sanitarium at Cairo, Egypt, attended the International Medical Congress held in Washington in 1887, and was much interested in the work of the National Museum. He has, since his return to Egypt, devoted his leisure time to special studies of the arts of the ancient Egyptians. Several very valuable collections have been received from him, among which are the following objects: Fifteen fragments of the Egyptian "Book of the Dead" in Hieratic, seven water-color sketches of ancient lamps, many ancient coins of various sorts, a modern Arabic almanac for the year Hegira 1300, containing autograph, two gold ornaments of Thothmes III, flower of the *Nymphaea cerulea*, the lotos of Upper Egypt, a beetle from Thebes, and many other objects of value and interest.

Mr. Jeremiah Curtin was sent, during the summer, by the Bureau of Ethnology to the Hupa Reservation in California, in order to study the languages and mythology of the tribes of Indians inhabiting the reservation. The Smithsonian Institution was fortunate enough to secure the assistance of Mr. Curtin in investigating their arts and industries

as well. A small sum of money was placed in his hands for the purchase of objects to complete the series of the Museum collection from this region.

Dr. John M. Crawford, United States Consul-General at St. Petersburg, expects to make extensive ethnological researches in Russia and Finland, and has generously offered to allow the National Museum to participate in the results. Dr. Crawford is well known as the author of the English translation of the Finnish epic "The Kalevala," as a philologist and a student of Scandinavian antiquities. His acquirements in these directions led to his being appointed Consul-General at St. Petersburg, from which place he would be able to carry on his studies of the Finnish race, and related peoples. Letters of introduction to several correspondents in Russia and Finland, have been furnished by the Smithsonian Institution in order to facilitate his work.

Rev. Frederick H. Post, late rector of St. Paul's Church, Salem, Oregon, has recently assumed charge of the mission of the Episcopal Church at Anvik on the Yukon River, Alaska. He is very much interested in the study of natural science and history, and has offered to serve the Smithsonian Institution in collecting information relating to the tribes of the Upper Yukon, and also in transmitting to the Museum specimens of the mammals and birds of that region. It is probable that Mr. Post will, next year, be furnished with an outfit of alcohol, guns, and ammunition.

Lieut. J. F. Moser, commanding the U. S. Coast Survey steamer *Bache*, has continued his explorations for the Museum and has sent a collection of fishes, mollusks, insects, and marine invertebrates from the vicinity of Cape Sable, Florida.

Prof. O. P. Jenkins, of De Pauw University, Indiana, proposes to visit the Hawaiian Islands during the summer for the purpose of collecting fishes, and has kindly offered to present a duplicate series of specimens to the Museum. To aid him in this undertaking the Smithsonian Institution has supplied him with seines, giving him also a letter of introduction to the curator of the National Museum in Honolulu.

During the summer of 1888, Mr. George P. Merrill, Curator of Geology, made a collecting trip to North Carolina, Pennsylvania, New York, Vermont, New Hampshire, Massachusetts, and Maine. Large collections of rock were obtained for the Museum.

Mr. Thomas Wilson, Curator of Prehistoric Anthropology, visited mounds in Ohio, and made interesting collections.

In August Dr. W. F. Hillebrand, of the U. S. Geological Survey, visited some of the Western States and Territories, partly with a view to making collections of minerals. These will eventually be incorporated with the Museum collections.

In order to further the work of those who have expressed their willingness to collect specimens for the Museum, as well as those who have been sent out as collectors by the Museum, outfits of apparatus, tanks, al-

cohol, etc., have been supplied. During the year the outfits here indicated have been furnished to the following-named collectors:

## 1888.

*August 3.*—Mr. W. A. Stearns, of Cambridgeport, Massachusetts, was supplied with a large outfit of tanks, dredge-nets, tin tags, pig bladders, bottles, vials, cheese-cloth, heavy paper, and a double-barrel shot-gun, for use in collecting natural history specimens for the National Museum in northern Labrador. It has been found necessary to postpone this expedition until next summer.

*December 19.*—Lieut. J. F. Moser, commanding the U. S. Coast Survey steamer *Bache*, has been furnished with tanks, packing-boxes, jars, etc. He has transmitted a collection of fishes, mollusks, insects, and marine invertebrates to the National Museum from the vicinity of Cape Sable, Florida, and has kindly signified his willingness to make additional collections, as opportunity may offer.

## 1889.

*January 15.*—Capt. W. L. Carpenter, who for many years has sent to the Smithsonian Institution collections of natural history specimens, is now stationed at Prescott, Arizona. He has kindly promised to continue his efforts in behalf of the Museum, in collecting fishes, reptiles, marine invertebrates, etc., for the preservation of which tanks and alcohol have been furnished.

*January 18.*—Lieut. E. H. Taunt, of Washington, District of Columbia, has offered to collect mineral specimens in connection with his cruise to the Congo River, South Africa. He has been supplied with a photographic apparatus by the Smithsonian Institution.

*February 4.*—Dr. L. F. H. Birt, of Greytown, Nicaragua, Central America, having in the past sent large collections of mammals, reptiles, fishes, birds, etc., to the National Museum, has been supplied with tanks and alcohol for the continuance of his services. Dr. Birt proposes to direct his attention later to the fishes and crustacea of the Atlantic and Pacific Coasts of this country, the results of which he will share with the Smithsonian Institution.

*March 28.*—Lieut. W. L. Howard, of San Francisco, California, offered to collect fishes and ethnological objects in Alaska for the Smithsonian Institution. To aid him in this undertaking the Institution has supplied him with tanks, alcohol and trade-supplies.

*May 22.*—An outfit of alcohol, a gun, and ammunition was supplied to Mr. I. C. Russell, of San Francisco, California, to aid him in his Alaska Expedition. The Alaska Commercial Company also afforded facilities to Mr. Russell, introducing him to its agent at St. Michael.

*May 27.*—Hon. Charles Bartlett, United States consul at Guadaloupe, West Indies, sent a number of brilliantly luminous insects, among them the "Cuenjo" (*Pyrophorus noctilucus*) for purposes of analysis. A number of insect-boxes were sent to him, and also to Señor José C. Zeledon of San José, Costa Rica, and Señor Ferrari Perez, City of Mexico, for the same purpose.

*June 8.*—Tanks and alcohol were sent to Dr. R. W. Shufeldt, of Tacoma, District of Columbia, in which place, he states, the opportunity is excellent to collect a number of embryo birds, many of which will greatly assist him in working out the morphology of the group. Dr. Shufeldt kindly offers to collect specimens for the National Museum.

*June 11.*—An outfit of tanks, alcohol, and shellac was sent to Mr. Frank Burns, of the U. S. Geological Survey.

James Mooney, of Cherokee, North Carolina, was supplied with tanks and alcohol. No collections have as yet been received.

Mr. C. R. Orcutt, of San Diego, California, has, from time to time, transmitted to the National Museum valuable collections of fishes, reptiles, fossils, marine invertebrates, etc., from California. During the past year he has been supplied with tanks, alcohol, jars, and a seine for this purpose.

Mr. W. Harvey Brown, of the National Museum, was appointed naturalist to accompany the United States Eclipse Expedition to South Africa. Being in the employ of the Smithsonian Institution he was furnished with a large outfit of tanks, alcohol, jars, oil, linen, and tools. It is probable that the next report will contain an account of the results of this expedition.

*June 13.*—Prof. O. P. Jenkins, of De Pauw University, Indiana, intends to visit the Hawaiian Islands, and has been supplied with seines to aid him in collecting fishes, a duplicate set of which he has expressed his intention of presenting to the National Museum.

*December 29.*—Dr. John I. Northrup received an outfit of tanks and alcohol to use during his visit to the Bahama Islands, where he expects to collect plants and animals, especially marine invertebrates and fishes. He offers to present a duplicate set of specimens to the Smithsonian Institution.

#### K.—REPORTS UPON THE PARTICIPATION OF THE SMITHSONIAN INSTITUTION AND THE NATIONAL MUSEUM IN THE EXPOSITIONS HELD AT CINCINNATI AND MARIETTA IN 1888.

*Letter from the Assistant Secretary to the Secretary of the Smithsonian Institution, relating to the participation of the Institution in the Cincinnati Exposition.*

MAY 7, 1889.

SIR: I have the honor to report that all work in connection with the participation of the Smithsonian Institution and the National Museum in the Centennial Exposition of the Ohio Valley and Central States, held in Cincinnati in 1888, has now been completed. All objects sent to Cincinnati have been returned to their proper places and damages suffered by specimens and furniture have been repaired to as great an extent as has been found practicable under the arbitrary and unusually stringent rulings of the Treasury officials in charge of the disbursements and account.

I transmit herewith a report (Appendix A) upon the Smithsonian participation in the Exposition, which has been prepared by Mr. R. Edward Earll, who was placed in charge of the administrative work at Cincinnati, it having been impossible for me to be absent from Washington during the continuance of the Exposition, and who performed the responsible and difficult duties of his position in an exceedingly efficient and faithful manner.

In his report a history of our work is given, and also a history of what was done by the various departments of the Museum and by the Bureau of Ethnology. In addition to what is stated in this report, reference should be made to the willing and efficient aid rendered by the curators of the Museum, who prepared a very instructive and impressive collection in a remarkably short time, notwithstanding the fact

that the work was done in the hottest part of the summer. Prof. Otis T. Mason contributed a comprehensive ethnological collection, Mr. Thomas Wilson a synoptical series of objects, illustrating prehistoric anthropology, the remains of primitive man in the new world and the old being shown side by side. Mr. Cosmos Mindeleff, who was detailed for this work by the director of the Bureau of Ethnology, prepared a display of the arts and architectures of the Pueblo Indians of the southwest. Dr. Cyrus Adler selected from the treasures of the section of Oriental Antiquities an exhibit of Biblical archaeology.

The history of transportation by land and water was happily and successfully shown by Mr. J. E. Watkins, who received most important aid from the Baltimore and Ohio and Pennsylvania Railroad Companies, and a supplementary display of models of ships and boats was arranged by Capt. J. W. Collins. Mr. S. R. Koehler, with great energy and enthusiasm, brought together a most instructive collection, illustrating the history and methods of the graphic arts, supplementing the collections already in the Museum by loans from his private collection and from those of his friends and correspondents. Mr. T. W. Smillie gathered a similar collection to illustrate the history and present condition of the art of photography. Mr. F. W. True, assisted by Mr. F. A. Lucas, prepared a collection showing the classification of mammals. Mr. W. T. Hornaday, by means of specimens and pictures, preached a sermon upon the extermination of the native animals of North America. Mr. Robert Ridgway exhibited an attractive collection of birds; Prof. C. V. Riley, aided by Mr. John B. Smith, prepared a collection showing the classification of North American insects. Dr. R. E. C. Stearns and Mr. Rathbun contributed a few cases from the departments of Mollusks and Marine Invertebrates. Mr. F. H. Knowlton prepared an exhibit from the botanical collections, and Mr. W. S. Yeates, under the supervision of Professor Clarke, arranged a case of North American gems and precious stones. All of these contributions are, as I have said, somewhat fully described in Mr. Earl's report, and this passing reference is made solely for the sake of making proper acknowledgment to those to whom the success of our work at Cincinnati is entirely due.

Special reference should be made to the work of Mr. W. V. Cox, who in addition to his regular duties in the Museum, undertook the financial administration of the work and carried through without a single disallowance from the Treasury the complicated and perplexing expenditures of the exposition's service. This was a task of much difficulty owing to the loose wording of the Congressional act providing for the participation of the Government departments, and still more to the capricious and unprecedented decisions of the special auditor appointed by the President to audit the exposition accounts. In this work Mr. W. W. Karr, who also rendered volunteer service, and Mr. W. H. Kimball, were exceedingly faithful coadjutors.

Mr. Cox was also charged with the preparation of a special display to



be sent to the Exposition at Marietta, Ohio, a report upon which, prepared by him, is hereto appended (Appendix B).

In conclusion I submit a brief review of the financial history of the work.

The entire appropriation for the Smithsonian Institution, National Museum, and U. S. Commission of Fish and Fisheries, for the Centennial Exposition of the Ohio Valley and Central States, as mentioned in the act of Congress authorizing the same, was \$50,000. Of this amount the sum of \$10,000, by agreement between the Secretary of the Smithsonian Institution and the Commissioner of Fish and Fisheries, was set apart for the use of the Commission, leaving \$40,000 to cover all expenditures of the Smithsonian and Museum for the purchase of new material to complete series as well as all charges for services, and for the transportation and subsistence of employes sent to Cincinnati and Marietta for the preparation, installation, and maintenance of exhibit.

The first step was the preparation of an estimate of probable expenditures, leaving a general contingent fund of about \$4,000, which was set aside to be drawn upon when necessary.

The act of Congress making the appropriation did not become a law until May 28, and the exposition was to be opened on the 4th of July. It therefore became necessary to make our selections and purchases with all possible haste. The Museum schedule rates were, however, taken advantage of when practicable. In cases where this could not be done, and where the amount involved was considerable, when the articles were such as are usually found in the market, competitive bids were obtained. The expense of this hurried work was proportionately great, and a considerable waste of time and effort was inevitable.

This extra exposition work crowded into the hot summer months made it necessary for the chief clerk and his assistants to be at their desks early and late, a demand which they cheerfully complied with, giving up their much needed vacations in order to keep up their regular and extra duties.

Vouchers had to be prepared in quadruplicate, one copy for the Smithsonian files, one for the special auditor, one for the disbursing officer, and one for the Treasury Department. This involved much clerical work, as the number of original vouchers was over three hundred, making it necessary, in order to fulfill all requirements, to prepare a total of more than twelve hundred copies of vouchers.

While the nature and amount of the disbursements could not be exactly determined in advance, it is gratifying to be able to report that a provisional schedule of classified expenditures, which was prepared in the beginning, was at least approximately correct, and would have been still more accurate but for the postponement of the time of closing the Exposition. As it is, the contingent fund of \$4,000 more than covers all differences between estimated and actual expenditures.

Although the Exposition was closed as long ago as November 8, 1888,

our accounts only became ready for final settlement on April 15, 1889. This delay was in part due to the fact that the regular routine of forwarding, signing, and returning the vouchers for articles purchased in foreign countries, necessarily consumed much time. Delay has also been caused by the retention and questioning of many vouchers in the office of the special auditor of Cincinnati accounts at the Treasury Department, although in every case his objections have been finally withdrawn, and all vouchers have, after protracted delays, been approved by that official. These delays, which seemed to us quite unnecessary, caused us much annoyance, as many of those who had furnished materials or labor, almost daily, either in person or by letter, urged upon us their need of funds and the great inconvenience they were compelled to undergo by the delays which were entirely beyond our control, but for which they were disposed to hold us responsible.

The Auditor raised many trivial points, which necessitated the writing of numerous letters in answer to uncalled for questions. This, together with long waiting for replies, which were usually transmitted verbally by a clerk, has greatly impeded action. In view of this experience it is urged that, should Congress decide to have the Smithsonian Institution and National Museum participate in future expositions, the law be so framed as to require the appointment of an auditing officer familiar with the demands of exhibition work, in order to prevent the unnecessary retardment of public business, and the consequent incurring of extra expense by the Government.

If such a course be not adopted, responsibility of selecting and deciding upon exhibits should be understood to rest entirely with the representatives of the various departments, and the auditor's province limited to the careful examination of accounts, which, of course, should be sufficiently detailed to prevent errors. Experience has proved that only by some similar division of responsibility can successful results be obtained.

Another fruitful cause of delay in our work has been the payment of all the accounts by a disbursing officer stationed at Newport, Kentucky, instead of Washington, where, as is always the case, nine-tenths of the bills are contracted. The paymaster drew checks upon the Cincinnati depository only, a method very unjust to employes and workmen, who were obliged to wait many days before receiving their checks, and then to lose something of their hard earned money by the refusal of the Treasury in Washington to honor the same. The only alternative for them was to present the checks to local banks, paying the usual discount rates.

*Statement showing condition of appropriation for Centennial Exposition of Ohio Valley and Central States, April 15, 1889.*

Appropriation .....	\$50,000.00
Fish Commission allotment.....	10,000.00
	<hr/>
Net appropriation .....	40,000.00

## ESTIMATE OF EXPENDITURES.

(a) Services of assistants, clerks, laborers, etc .....	\$16,752.00	
(b) Fittings, materials, cases, travel, freight, storage, etc....	13,300.00	
(c) New material completing series, specimens, models, etc.	5,750.00	
(d) General contingent fund.....	4,198.00	
	<hr/>	40,000.00

## ACTUAL EXPENDITURES.

(a) Services of assistants, clerks, laborers, etc .....	20,305.41	
(b) Fittings, materials, cases, travel, freight, storage, etc....	13,841.33	
(c) New materials completing series, specimens, models, etc.	4,542.62	
(d) Unexpended balance.....	1,310.64	
	<hr/>	40,000.00

I recommend that the balance to the credit of the Institution, amounting to \$1,310.64, be covered into the Treasury according to law.

Very respectfully,

G. BROWN GOODE,  
*Assistant Secretary.*

Prof. S. P. LANGLEY, LL. D.,  
*Secretary of the Smithsonian Institution.*

## APPENDIX A.

REPORT UPON THE EXHIBIT OF THE SMITHSONIAN INSTITUTION, INCLUDING THE U. S. NATIONAL MUSEUM, AT THE CENTENNIAL EXPOSITION OF THE OHIO VALLEY AND CENTRAL STATES, HELD AT CINCINNATI, OHIO, IN 1888.

By R. EDWARD EARLL.

### 1. HISTORY OF THE MOVEMENT.

The series of industrial exhibitions which culminated in the recent Centennial Exposition at Cincinnati had their origin in the annual fairs of the Ohio Mechanics' Institute. These fairs, though limited in scope, and depending largely both for their exhibits and patronage on the immediate vicinity, were very successful. They were held regularly for about twenty years prior to the war of the rebellion, but owing to the nearness of the city to hostile territory it became necessary to temporarily abandon them during this period. When revived in 1868 it was decided to greatly enlarge their scope. The Mechanics' Institute invited the co-operation of both the Chamber of Commerce and the Board of Trade, the result being the Cincinnati Annual Industrial Exposition, with a board of fifteen directors consisting of five representatives from each of the bodies named. The expositions, which from that date were held almost yearly, met with much encouragement, not only from the local population, but from residents of other portions of Ohio and of the adjoining States. This encouragement led to the erection of permanent buildings in the center of the city at a cost of more than a million dollars.

As early as 1883 it was decided that the exposition for the centennial year (1888) should exceed any of those previously held, and that an attempt should be made to show the progress "of art, science, and industry" in the States comprising the original Northwest Territory during the first century of their occupation by civilized man. This was in accord with the action taken at the semi-centennial celebration of the settlement of Cincinnati in 1838, when a committee was appointed to see that "the one-hundredth anniversary of the settlement of Cincinnati, occurring in 1888, be properly celebrated." An organization was soon perfected and plans developed for holding "the Centennial Exposition of the Ohio Valley and Central States," including "the States of the Northwest Territory and those which border upon the Ohio and even farther to the south." After considerable discussion it was decided, in view of the central location of the permanent buildings, that

these should be used as a nucleus, and that additional space be secured for the erection of other buildings. Application was made to the board of public affairs, which granted the use of Washington Park on the east, and of certain streets bordering the Miami Canal on the west. In this way floor space aggregating 400,000 square feet, with 142,500 additional feet of wall space, was secured in the heart of the city. To place the project on a sound financial basis a guaranty fund of \$1,050,000 was raised among the citizens of Cincinnati.

The movement was indorsed by the city councils of Cincinnati, Covington, and Newport, and by the Ohio State legislature, which authorized the appointment of honorary commissioners, voted a small sum of money for State representation, and directed the governor, in behalf of the State, to invite "the assistance and co-operation of the Federal Government, our sister States, and especially the Central States of West Virginia, Pennsylvania, Kentucky, Tennessee, Indiana, Illinois, and Michigan, and that they be requested to appoint five honorary commissioners each to assist in the organization and carrying on of this Centennial Exposition." These States passed formal resolutions of acceptance and appointed honorary commissioners, but, as a rule, little was attempted in the way of preparing State exhibits.

Copies of the resolutions extending an invitation to the Federal Government were sent to the President and to Congress; and after considerable delay the initiative was taken by the Appropriations Committee of the House of Representatives, the chairman of which addressed letters to the heads of the several Departments with a view to ascertaining what could be done, and the amount of money needed by each for making a suitable display. This correspondence resulted in the draughting of a bill by members of said committee, which, after slight amendment, passed both Houses of Congress and received the President's signature. The bill as passed read as follows:

AN ACT making an appropriation to enable the several Executive Departments of the Government and the Bureau of Agriculture and the Smithsonian Institution, including the National Museum and Commission of Fish and Fisheries, to participate in the Centennial Exposition of the Ohio Valley and Central States, to be held at Cincinnati, Ohio, from July fourth to October twenty-seventh, eighteen hundred and eighty-eight.

Whereas the States which comprise the Northwest Territory and the adjacent States will hold at Cincinnati, Ohio, from July fourth to October twenty-seventh, eighteen hundred and eighty-eight, a centennial exposition commemorative of the organization of the Northwest Territory under the ordinance of seventeen hundred and eighty-seven, in which exposition all the States and Territories of the United States and the General Government have been invited to participate, the object being in said exposition to present a panorama of the nation's resources and present state of progressive development, by an exhibition of the products of agriculture, of the various industries and fine arts; also the results of advancement made in the sciences; the whole illustrating the opportunities secured to and the possibilities which wait upon the citizens of this Republic; and

Whereas the citizens of the Ohio Valley and the several States adjacent thereto have made suitable and adequate preparation and arrangements for holding said exposition, and are desirous, and it being fit and proper, that the several Executive Departments of the Government, the Department of Agriculture, the Smithsonian

Institution, including the National Museum and Commission of Fish and Fisheries, should participate in said exhibition: Therefore,

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the head of each of the several Executive Departments of the Government, the Commissioner of Agriculture, and the Smithsonian Institution, including the National Museum, and Commission of Fish and Fisheries, under the direction of the President of the United States, be, and they are hereby, authorized and directed to prepare and make suitable exhibits at the said Centennial Exposition of the Ohio Valley and Central States to be held at Cincinnati, beginning on the fourth of July, and closing October twenty-seventh, eighteen hundred and eighty-eight.

That there shall be appointed a committee of Congress composed of ten members, five to be appointed by the President of the Senate and five by the Speaker of the House of Representatives. Said committee is authorized and directed to visit said exposition, and make such report to Congress in that behalf as they may deem needful and proper: *Provided,* That the President may, in the exercise of his discretion, allow such documents and exhibits as relate to early settlement at Marietta, Ohio, and the establishment of civil government in the Territory Northwest of the Ohio River, to be taken to Marietta and exhibited during the time from July fifteenth to nineteenth, eighteen hundred and eighty-eight, inclusive, under such restrictions and custody as he may direct.

That to enable the several Executive Departments of the Government, the Department of Agriculture, and the Smithsonian Institution, including the National Museum and the Commission of Fish and Fisheries, to participate in said exposition to be held as aforesaid, there is hereby appropriated out of any money in the Treasury not otherwise appropriated one hundred and forty-seven thousand seven hundred and fifty dollars, apportioned as follows:

For the War Department, seven thousand one hundred and fifty dollars

For the Navy Department, fifteen thousand dollars.

For the State Department, two thousand five hundred dollars.

For the Treasury Department, seven thousand five hundred dollars.

For the Interior Department, thirty-six thousand one hundred dollars.

For the Department of Agriculture, twenty thousand dollars.

For the Post-Office Department, five thousand dollars.

For the Department of Justice, two thousand dollars.

For the Smithsonian Institution, including the Commission of Fish and Fisheries, fifty thousand dollars.

For the expenses of the committee of Congress, two thousand five hundred dollars.

That the President may, if in his judgment it shall be deemed necessary and expedient in order to secure the best results with greatest economy, transfer a part of the fund hereby apportioned to one Department or Bureau to another Department or Bureau. The term Bureau wherever used herein shall be construed to include the Agricultural Department, the Smithsonian Institution, and Commission of Fish and Fisheries.

That the President of the United States is hereby authorized to detail an officer of the pay department of the Army or Navy to disburse the fund appropriated by this act.

The payments on account of the expenses incurred in carrying out and into effect the provisions hereof shall be made on itemized vouchers approved by the representative of the Department incurring the liability, and a person to be designated by the President to make final audit of said accounts: *Provided,* That payment of the expenses incurred by the committee of Congress shall be made on vouchers approved by the chairman of said committee.

That the head of each of said Executive Departments and of the Department of Agriculture, Smithsonian Institution, and Commission of Fish and Fisheries shall, from among the officers or employees thereof, appoint a suitable person to act as rep-

representative of such Department or Bureau, and said representative shall, under the direction and control of the head of the Department or Bureau, supervise the preparation and conduct of the exhibits herein provided for.

That no officer or employee appointed as aforesaid shall be paid extra or additional compensation by reason of services rendered in virtue of such employment; but nothing herein shall be so construed as to prevent the payment of the just and reasonable expenses of any committee, officer, or employee appointed or employed under or by virtue of the provisions of this act.

That all articles imported from the Republic of Mexico or the Dominion of Canada for the purpose of being exhibited at said exposition shall be admitted free of duty, subject, however, to such conditions and regulations as the Secretary of the Treasury may impose and prescribe.

Approved May 28, 1888.

Shortly after the passage of the above bill the President, in accordance with its requirements, designated one of the officials of the Treasury Department as special auditor. This gentleman at the outset questioned the right of the various Departments under the act to purchase any specimens for the completion of their exhibits, claiming that the collections must be made up of materials already on hand. This necessitated further action on the part of Congress which took the shape of a joint resolution declaring the meaning of the act. The resolution read as follows :

JOINT RESOLUTION declaring the true intent and meaning of the act approved May twenty-eighth, eighteen hundred and eighty-eight.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That it is the true intent and meaning of the act of Congress approved May twenty-eighth, eighteen hundred and eighty-eight, by the President of the United States, entitled "An act making appropriation to enable the several Executive Departments of the Government, and the Bureau of Agriculture, and the Smithsonian Institution, including the National Museum, and the Commission of Fish and Fisheries, to participate in the Centennial Exposition of the Ohio Valley and Central States to be held at Cincinnati, Ohio, from July fourth, to October twenty-seventh, eighteen hundred and eighty-eight," that the President of the United States may, in his discretion make an order directing that any documents, papers, maps, not original, books or other exhibits which properly and pertinently relate to the establishment of civil government in the territory northwest of the Ohio River, may be sent upon an Executive order from any of the several Departments in said act named, or from the exhibits now at Cincinnati; and that the appropriation of money in said act to defray the expenses of such exhibits, may be made applicable, in so far as the President of the United States may direct, to the payment of the expenses, of the care, transportation to, and return of, such exhibits from Marietta. And the same shall be paid from such fund heretofore set apart for each Department as the President may order. Nor shall anything in said act be so construed as to prevent the purchase of suitable materials, and the employment of proper persons, to complete or modify series of objects, and classes of specimens, when in the judgment of the head of any Department, such purchase or employment or both is necessary in the proper preparation and conduct of an exhibit. Nor to authorize the removal from their places of deposit in Washington of any original paper or document or laws or ordinances whatever.

Approved, July 16, 1888.

The original bill received the President's approval May 28th and on the following day in accordance with its requirements the Secretary of

the Smithsonian Institution appointed Dr. G. Brown Goode the Assistant Secretary in charge of the U. S. National Museum, as its representative.

The item of \$50,000, appropriated for the Smithsonian Institution in the bill, included the U. S. Fish Commission, and, by an agreement with the Commissioner of Fisheries, \$10,000 was set apart for the use of said Commission, leaving \$40,000 to be expended under the direction of the Institution. As little more than a month remained before the exposition was to open, it was impossible for the Smithsonian, or, in fact, for any of the Departments to prepare suitable exhibits, ship them to Cincinnati, and have them properly installed by the opening day. However, as no time was to be lost, a meeting of the representatives of the various Departments was called with a view to the organization of a board, and the settlement of questions relating to the amount and location of the space to be assigned to each Department. At the first conference it was found that at least 100,000 square feet of floor space would be required to accommodate the exhibits which the several representatives proposed sending, but upon inquiry it was learned that the exposition officials, owing to the delay in the passage of the bill, and to the uncertainty as to the final action upon it, as well as to their lack of information concerning the amount of space required by the Government, had reserved only one short wing of the park building, aggregating about 13,000 square feet, for its use, the remainder having already been assigned to private exhibitors. As this amount was wholly inadequate, they at once consented to erect additional buildings in the park adjacent to, and communicating with, the wing already reserved. But as the unoccupied space in the park was limited, it was impossible, notwithstanding their very generous disposition, to find room for new buildings of sufficient size to furnish the additional accommodations desired. It was finally decided to erect two annexes, one on either side of the Government wing of the main building, and in this way 29,000 feet additional were secured making a total of about 42,000 square feet available for the use of the Government.

This space was divided approximately as follows:

	Feet.
War Department.....	4,000
Navy Department.....	4,750
State Department.....	750
Treasury Department.....	4,250
Interior Department.....	6,000
Agricultural Department.....	4,000
Post-Office Department.....	2,500
Department of Justice.....	750
Smithsonian Institution.....	12,000
Commission of Fish and Fisheries.....	3,000
Total.....	<u>42,000</u>

It will thus be seen that the space occupied by each Department was very much less than that desired, in some cases only a little more than one-third of the amount asked being assigned.



## 2. PREPARATION AND INSTALLATION OF THE SMITHSONIAN EXHIBIT.

Immediately on his appointment Dr. Goode commenced active operations. He soon outlined an exhibit which would require at least 20,000 feet of floor space, and it was not until the work was well under way that it became known that only 12,000 feet could be secured. This necessitated considerable change in the plans, and it was finally decided to omit entirely certain subjects and to substitute pictures and models for the more bulky specimens in other groups, in order to bring the exhibit within the space assigned.

In deciding upon the general character of the exhibit and the subjects to be represented, he was governed largely by the objects of the exposition as set forth in the preamble to the bill—viz: "To present a panorama of the nation's resources and present state of progressive development, by an exhibition of the products of agriculture, of the various industries and fine arts; also the results of advancement made in the sciences; the whole illustrating the opportunities secured to and the possibilities which wait upon the citizens of this Republic."

As the National Museum has an average attendance of about 300,000 visitors yearly, it was necessary that its interests also should be considered; and it was decided to interfere as little as possible with those departments, the exhibits of which were fairly complete and properly arranged, but in so far as might be practicable, to select the specimens for Cincinnati from the newer departments, and from the duplicate materials, and to secure from other sources such additional articles as might be necessary to complete the exhibits. By this plan the educational value of the Museum was largely preserved, and its most interesting series were left intact for comparison and study by its numerous visitors.

Having outlined, in a general way, the plan of the exhibit, Dr. Goode called to his aid the curators of the several Museum departments which were to be represented. These officials were charged with the responsibility of preparing the necessary collections for their respective departments; and, as only four weeks remained before the opening of the exposition, they were obliged to neglect their regular museum duties and to devote their entire time and energies to the Cincinnati work. A large force of laborers and mechanics was at once employed in packing such articles as were ready for shipment, and in mounting specimens, making models, cases, and other necessary articles, while the curators busied themselves with the selection and arrangement of the available museum specimens, and in securing such new material as was required for completing the collections under their charge.

The first car-load of exhibits left on June 22, and others followed in rapid succession, so that by the 30th of the month eight of the twelve car-loads had been forwarded, all of the remainder, with the exception of the photographic exhibit, which was of necessity considerably delayed, leaving by the 12th of July.

To save time, articles obtained from other parts of the country and from abroad, were sent direct to Cincinnati without coming to Washington at all.

Owing to the departure of Professor Langley for Europe, in June, for an absence of some months, the duties of Acting Secretary of the Smithsonian Institution devolved upon Dr. Goode. This rendered it quite impossible for him to go to Cincinnati, and the writer was designated deputy representative. He left Washington in company with Mr. James S. Morrill, who was to act as clerk, on the 26th of June, arriving in Cincinnati the following day. He was soon joined by a number of the Museum curators who came on to superintend the installation of their respective exhibits. About the same time Mr. Henry Horan arrived with several skilled mechanics and laborers to assist in the general work.

The space assigned to the Smithsonian was located in the northern annex to the park building near the Race street entrance. It consisted of a rectangular space 125 feet long by 95 feet wide, an uninterrupted wall space 13 feet high, extending along one entire side, this being practically continued around the remainder of the area by means of partitions which were built to separate it from the adjoining departments. This gave a floor space of 11,875 square feet with about 6,000 additional feet of wall space, the latter being increased to over 10,000 feet by means of screens and partition, which it was found desirable to put up. After setting off a strip 17½ feet wide through the center of the space in its longest direction for a main aisle or thoroughfare, the remainder was assigned to the sectional exhibits as follows:

	Square feet.
Prehistoric Anthropology.....	600
General Ethnology.....	1,120
Bureau of Ethnology.....	1,425
Biblical Archaeology.....	280
Transportation.....	600
Naval Architecture.....	312½
Graphic Arts.....	1,500
Photography.....	925
Mammals (systematic exhibit).....	953
Mammals (extermination series).....	884
Birds.....	325
Insects.....	238
Mollusks.....	250
Marine Invertebrates.....	125
Botany.....	90
Mineralogy.....	60

The first four car-loads of exhibits reached the exposition on the 28th of June, but, as the annex in which they were to be placed was not completed, they were temporarily stored on adjoining space in the main building. Two days later the workmen completed the annex and the boxes were at once moved into it. Forty-five men, including the Washington party, were soon at work unpacking and arranging the exhibits,

and while it was wholly impossible to have everything ready for the opening day an effort was made to have the installation as far advanced as possible, and by working early and late the work was rapidly advanced, so that by 10.30 on the morning of July 4, when at the request of the Commissioners work was temporarily suspended, enough had been accomplished to give the visitor an idea of the character of the exhibit, and of what might be expected when finally completed. Equal activity prevailed in the other departments, and though none had their collections permanently installed, the progress made was very gratifying. After the opening ceremonies were over, work was resumed, and as the articles arrived, they were rapidly put in place, but owing to soot which filled the air and settled upon the exhibits in such quantities as to seriously injure them, and also to the tendency of the visitors to handle the specimens, it became necessary to put many articles under glass, which otherwise would have remained uncovered. In this way the work of installation was somewhat prolonged, and it was more than four weeks before it was fully completed, though the public was admitted to all of the Government departments during the progress of the work.

The private exhibits in the various classes were as a rule in place on the opening day, and all of the available space was occupied.

The Exposition, while in every way creditable to the management, did not receive that support from the public which its merits justified. The attendance during the first two months, possibly owing somewhat to the warm weather and the demands upon the time of the agricultural classes during the harvest season, was very light. However, as the weeks passed, it gradually improved, and during the months of September and October was fairly satisfactory; but the lack of co-operation on the part of the railroads unquestionably had a marked influence on the attendance of people residing at a distance. Thinking that possibly the high price of admission had kept many away, it was decided to continue the exposition for a few days beyond the 27th of October, which was the time set for closing, and to reduce the entrance fee to 25 cents, thus giving all classes the opportunity of seeing and studying the exhibits. But this did not result in any marked increase in the number of visitors, and when the doors were finally closed to the public on November 8, the turnstiles showed a total attendance of only 1,055,276, or an average of 9,593 daily, as against a daily attendance of 55,061 at Philadelphia in 1876. It was, however, considerably in excess of the daily attendance at New Orleans in 1885, which averaged (Sundays included) only 6,438. When it is remembered that Cincinnati is in the center of a very prosperous country, with a population of nearly five millions of people within easy access, the figures are certainly far below what might reasonably have been expected. Yet it should not be inferred that the Exposition was a failure, for the visitors as a rule appeared to be greatly interested, and the collections were studied with very great

care by various classes, notably by students from the institutions of learning in Ohio and adjoining States, and the educational influence upon these can not be overestimated.

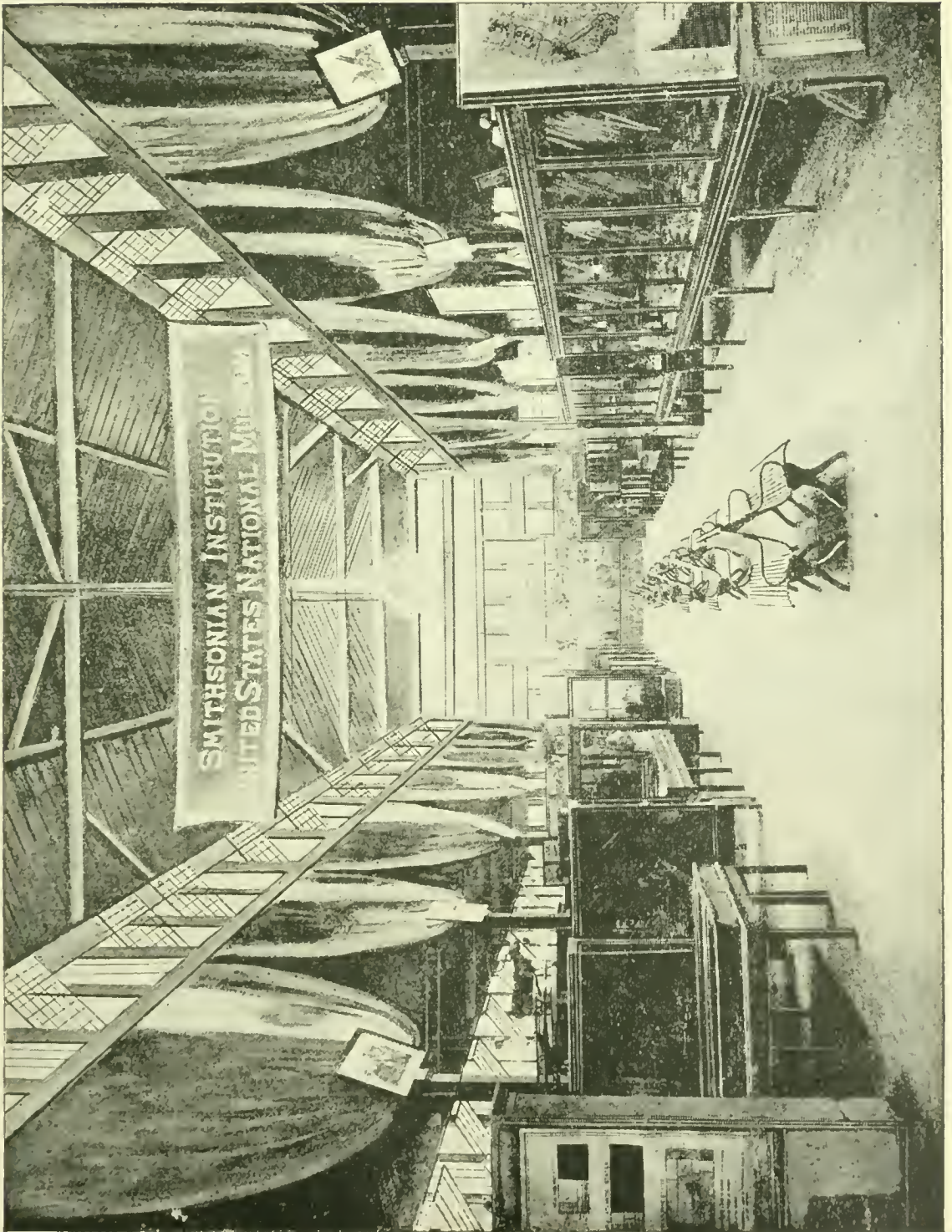
Governmental participation in the expositions of the past has usually been urged on the ground of the great educational value of such undertakings to the intelligent visitors. No one who has given the slightest thought to this subject or who has observed the crowds in their examination of the collections, will for a moment deny this, nor will they fail to discover that the exhibits of the General Government attract by far the most attention. If these departmental exhibits, when properly installed in Washington, were accessible to all, there would certainly be no excuse for ever sending them to other localities; but as such a vast majority of the people of the country never visit the National Capital, the practice of sending educational collections to the larger centers of population is perhaps justifiable.

On November 8, the day set for closing, a party of eight arrived from Washington to assist in the work of packing the exhibits. It consisted of Mr. F. A. Lucas, who was to superintend the packing of the natural history collections, and Mr. Horan, who, with six skilled workmen, was to assist in the general work. A number of local mechanics and laborers were also employed and the work of packing was vigorously pushed. Five car-loads of exhibits were ready for shipment on the 20th of the month, and others were forwarded at intervals during the next two weeks, the last starting on December 4. They arrived with less than the usual amount of breakage, and by the middle of the following February, a very large percentage of them had been unpacked, repaired, and returned to their places in the Museum collections.

In accordance with the provision of the law, the President on July 11, authorized the sending of an exhibit to Marietta, Ohio. Most of the material for this exhibit was sent direct from Washington, though a few articles were forwarded from the collections at Cincinnati. This collection was under the direction of Mr. W. V. Cox, chief clerk of the Museum, who has prepared a detailed report on the subject.

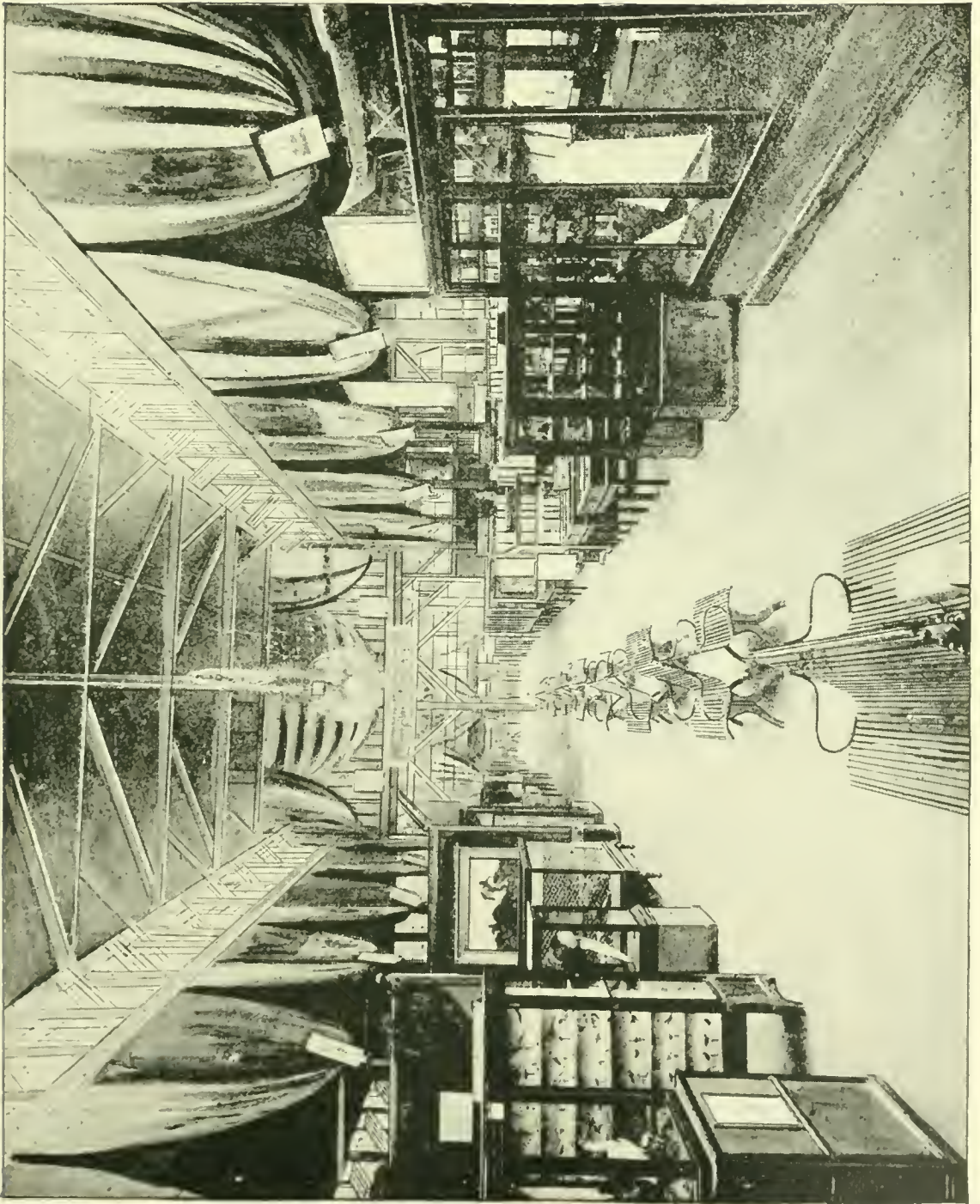
### 3. REVIEW OF THE SMITHSONIAN EXHIBIT.

The collective exhibit of the Smithsonian was, as already intimated, made up of separate collections prepared by the curators of several of the departments of the Museum. The general display may be divided into three groups, namely: Anthropological exhibits, natural history collections, and series belonging to the department of arts and industries. A detailed description of the separate exhibits, or in fact, even a list of the objects exhibited, would extend this paper far beyond the proper limit. It, however, seems desirable to give a brief statement of the general character of the exhibits of the various sections. Such a statement will be found in the following pages. When fuller informa-



GENERAL VIEW OF THE SMITHSONIAN EXHIBIT, LOOKING NORTH.





GENERAL VIEW OF THE SMITHSONIAN EXHIBIT, LOOKING SOUTH.





tion is desired, it can be found in the reports of the curators, under whose direction the separate exhibits were prepared.

#### SECTION OF PREHISTORIC ANTHROPOLOGY.

Mr. Thomas Wilson, Curator of Prehistoric Anthropology, was requested to prepare an exhibit which should illustrate the methods employed in the study of prehistoric man, and the present state of our knowledge of his manners and customs, and of his geographical distribution during the different periods. To accomplish this purpose, he selected about two thousand specimens which would best represent man's progress during the early centuries of his existence. These included objects from all parts of the world. They were arranged in continuous series in cases placed end to end to represent the stream of time during the prehistoric ages. The entire series of cases was divided longitudinally, each separate division being devoted to a different country or group of countries. At the top was Great Britain, next below came France and Belgium, then Italy, Switzerland, the Scandinavian countries, Asia, Africa, Oceanica, and at the bottom the United States. Perpendicular divisions were also made to represent the various epochs of prehistoric civilization. By this arrangement it was easy to compare the progress of man in the different countries, and to show the variations in the implements used in each. Special attention was given to demonstrating that our own country was inhabited during the earliest periods. This was done by the exhibition of large series of specimens similar in all important particulars to those belonging to the earlier epochs from the Old World.

The collection began with the Chellian epoch, when man used but one implement, a crudely chipped stone, and followed down through the different divisions of the stone age, then through the age of bronze to that of iron, showing clearly the steps in human progress from a lower to a higher civilization. Charts showing the distribution of prehistoric man and the location of his settlements during different epochs were exhibited; also drawings and models of the Swiss Lake dwellings; a skeleton of the cave bear; and a series of crude stone, ivory, bone, and metal implements, used by Indians of modern times, to illustrate the various methods of fastening them to handles.

#### SECTION OF ETHNOLOGY.

The Curator of Ethnology, Prof. O. T. Mason, was asked to prepare an exhibit to illustrate in a general way the leading characteristics of the different races of men; and to show the tribal relations of the North American Indians and the progress made by them in civilization. His exhibit occupied more than 1,100 square feet of floor space, and attracted much attention. It was divided into two series, namely: the general ethnological exhibit, which included all of the principal races of men, and the collections illustrating the life and habits of the various

Indian tribes. The first series contained diagrams showing the classification of mankind into races, and maps indicating, by colored areas, the distribution of the various races over the face of the earth. These were followed by models in plaster of the heads of many of the semi-civilized people of the Old World, and by full-sized figures showing the characteristic costumes of the various nationalities.

The exhibit relating to the North American Indians was naturally more extensive. It included a large number of hand-colored photographs showing both profile and front views of prominent members of each of the more important tribes. The life and habits of these Indians were illustrated by means of carefully selected collections of their implements, utensils and costumes. Among the specimens shown were war-clubs, bows, arrows, spears, tomahawks, scalping-knives, cooking utensils, samples of weaving, dressed skins and agricultural implements. Collections illustrating the art, religion, and pastimes of the Indians were also exhibited.

In the center of the space occupied by this department was a collection showing the chemical composition of the human body. The series was based upon a man weighing 154 pounds, the exact quantity of each of the various solids, liquids, and gases being represented. On the opposite side of the same case were series showing the daily income and expenditure of the human body, and the amount of food required during a day of twenty-four hours by a man of moderate work, based upon the latest investigations by physiological chemists; also a series showing the chemical constituents of a pound of wheat bread.

Adjoining the general ethnological exhibit was a collection prepared by Mr. Walter Hough, to show the development of the lamp. It was not limited to the United States, but contained objects from various other countries as well. The series began with the fire-fly cage from the West Indies and the candle-fish of the Eskimo, and included the more interesting forms of torches, candles, lanterns, and the various stone, metal, and glass lamps adapted to both animal and mineral oils and to electricity.

#### EXHIBIT OF THE BUREAU OF ETHNOLOGY.

In addition to the exhibit made by the department of ethnology in the National Museum, already referred to, the Director of the Bureau of Ethnology, Maj. J. W. Powell, was requested to furnish a supplemental exhibit which should illustrate the methods employed by said Bureau in the study of the North American Indians. This exhibit, which was prepared by Mr. Cosmos Mindeleff, related chiefly to the Pueblo Indians and the mound-builders. It contained plaster models from life, by Theo. A. Mills, of six of the leading members of the Zuñi tribe. These were dressed in their characteristic costumes, including the ornaments worn by them. In an adjoining case was a relief map of a section of the Zuñi country showing the location of their settlements. Next came a series of scale models and photographs of many of their

dwellings, both ancient and modern. Among these were some of the most noted ruins as well as several of their most populous villages. The largest model, which was about 15 feet square, represented the village of Zūni on a scale of 1 to 60, all of the important details being carefully reproduced. The arts and industries of these people were represented by cases containing large collections of their textiles, basketry, pottery, agricultural implements, and household utensils. The mound-builders were represented by several carefully prepared models of noted mounds from different parts of the country; among these were the Great Elephant Mound of Grant County, Wisconsin, and the Large and Small Etowah Mounds of Bartow County, Georgia, with samples of pottery and other articles taken from them.

#### EXHIBIT OF BIBLICAL ARCHEOLOGY.

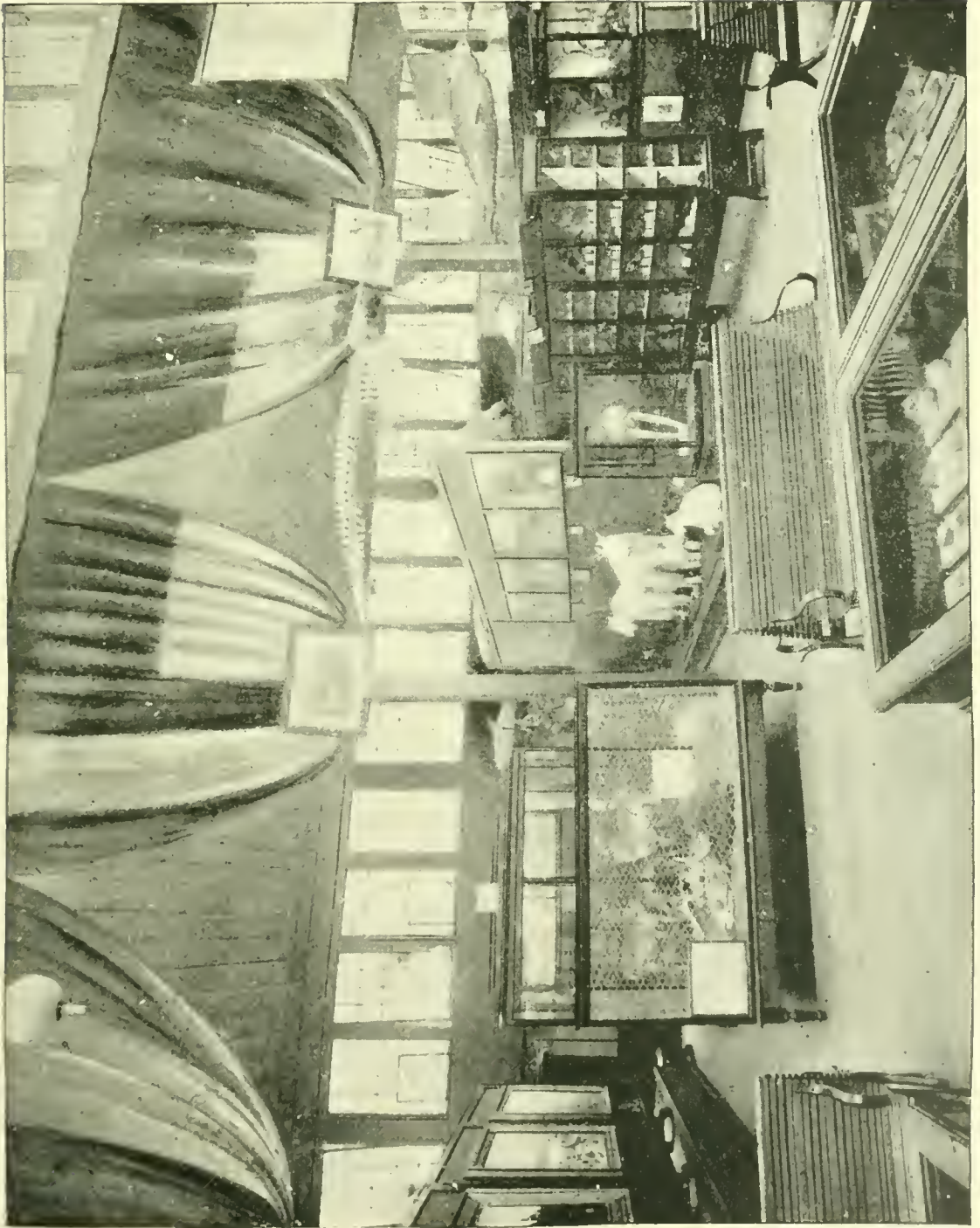
Owing to the wide-spread interest in biblical studies, Dr. Cyrus Adler, Assistant Curator of the Section of Oriental Antiquities, was called upon to prepare an exhibit which should enable Bible students (of whom it is estimated that there are already more than four millions in the Sunday-schools of the United States) to see something of the results of the work of the numerous specialists who have devoted their time and energies to the study of the people of Bible lands, and to become familiar with some of the interesting objects which have been collected and studied, with a view to the better understanding of the language, history, art, social life, and religion of these people. Nearly all of the most interesting objects secured by archaeologists are in foreign museums, and the time was too short to have casts of them made and forwarded; but by the co-operation of a number of people in this country who had articles in their possession, and by the liberal use of photography, it became possible to get together considerable material, which with the articles already in the possession of the Museum made a very instructive exhibit. The collection was not confined to the Israelites, but included all of the people with whom they came in contact. "Owing to the unparalleled conservatism of these people," says Dr. Adler, "proper names, dialectic forms, architecture, costumes, and, what is more surprising, considering the changes of faith, even religious practices have persisted in the East through thousands of years," and the collections therefore properly included many objects still in use. The exhibits were arranged by countries, including Assyria and Babylonia, Egypt, Elam, and Palestine. They contained objects from a period beginning 3800 years B. C., and continuing to the present time, including royal seals and impressions of same, casts of obelisks and tablets containing pictorial and historical inscriptions, photographs of the Egyptian pyramids, sphinxes, sculptures, mummies of noted kings, with specimens of plants, shells, lamps, and costumes collected in the several countries named. Among the more interesting objects were the casts of the Black Obelisk of Shalmaneser II, the Rosetta Stone, the Moabite Stone, and the Siloam Inscription.

## SECTION OF MAMMALS.

The Curator of the Department of Mammals, Mr. F. W. True, was asked to prepare an exhibit which should illustrate the principles on which the present classification of mammals was based. The family was selected as the division which would best represent the general theory of classification, and it was decided to send a collection which should include one or more characteristic specimens of every known family. As quite a number of the families were not represented in the museum collection it became necessary to secure specimens from other sources, and when such could not be obtained, to represent the family by means of pictures. Owing to the fact that classification rests partly on external and partly on internal characters, both skeletons and stuffed specimens were included. The families, excepting only a few of the largest forms, which from their size had to be separated from the systematic series, were arranged in zoological order in one continuous case 140 feet long, beginning with the highest order, man, and ending with the lowest or egg-laying mammals, thus affording excellent opportunities for study and comparison. The collection naturally included many animals with which the public had thus far had little opportunity for becoming acquainted. Among these were the gorilla, chimpanzee, aye-aye, panda, walrus, coney, tapir, saiga, antelope, almiqui, shrew, tana, chinchilla, coypu, whale, porpoise, manatee, aard-vark, pangolin, armadillo, ant-eater, duck-bill, and many other forms seldom found in expositions in this or any other country.

## MAMMAL EXTERMINATION SERIES.

Adjoining the systematic mammal collection was a special exhibit prepared by Mr. W. T. Hornaday, Curator of Living Animals, to direct the attention of the public to the rapid destruction of many of the larger animals which are fast disappearing from the country, and are already in great danger of extermination. The series included the bison, or American buffalo, moose, elk, antelope, mountain goat, mountain sheep, walrus, elephant-seal, and the beaver. The bison was the object of special attention, and a large series of pictures were shown to illustrate the numerous methods employed by both Indians and whites in its destruction. In the center of the exhibit, upon a sod-covered pedestal, was a skeleton of a bison from which the hide had been removed, showing the condition in which the carcasses are left upon the plains by the hide-hunters; and on adjoining screens were specimens of the various grades of commercial hides, with a schedule of their past and present market values. There was also on exhibition a very instructive map of North America, showing by colored areas the original territory covered by the buffalo, and its narrowing range from time to time during the past quarter of a century, due to the destructive agency of man. In the rear of the exhibit was a case containing samples of the hides of



MAMMAL EXTERMINATION SERIES, SMITHSONIAN EXHIBIT.



other animals which have been eagerly sought by the hide-hunter, and an exhibit of the different weapons used in the destruction of the various species.

#### SECTION OF BIRDS.

An instructive exhibit of birds was prepared by the Curator of Birds, Mr. Robert Ridgway. It consisted of an extensive collection of finely mounted and carefully labeled specimens of the birds of North America, and of smaller series of the principal birds of foreign countries.

The collection of North American birds was very complete, including examples of every known genus excepting only a few of the larger water birds and birds of prey, which were omitted for lack of space. They were arranged in proper sequence, thus affording an excellent opportunity for the study of the latest scientific classification. In a few instances, where the birds were too rare and valuable to warrant the sending of specimens, they were represented by means of original water-color paintings by the curator. The collection of foreign birds, though much smaller, consisted of the characteristic types of various countries selected for the purpose of showing something of the bird fauna of the principal zoo-geographical regions of the earth. Among those represented were the Australian, Indo-Malayan, and Ethiopian regions, and the principal birds of Europe. Another series which attracted much attention from the exposition visitors was a collection of the principal birds of literature, with the names by which they are known in poetry and appropriate quotations from the leading authors regarding them. A collection of birds' eggs and casts of same to represent the various sizes, from the egg of the extinct *epyrorius* or giant ostrich of Madagascar, with a capacity of two gallons, to that of the humming-bird, and a set of facsimile reproductions of the plates of Audubon's books on the birds of North America were also exhibited.

#### SECTION OF INSECTS.

This exhibit was prepared by Dr. C. V. Riley and Mr. John B. Smith. It consisted of a systematic collection illustrating the various families of insects, and economic series showing separately the species injurious to agriculture and to forests. The systematic series represented, either by specimens or detailed drawings, all of the families of American insects. Where practicable, care was taken to select large and showy specimens to represent the different families, thus attracting the attention of the public as well as that of the specialist to the exhibit. This was notably true in the case of the *Coleoptera* and *Lepidoptera*, which contained many attractive forms. Each family was accompanied by a descriptive label calling attention to its peculiar characters, and in many instances was illustrated by several species. This series contained several thousand specimens, and was much admired both by the

public and by students interested in this branch of natural history. The economic exhibit contained separate series, each being devoted to a particular species, including insects that feed upon the different grains, the cotton plant, the apple, the grape, and the various species of ornamental and forest trees. It was prepared for the benefit of the agricultural classes, and contained specimens and drawings illustrating the development of the various species, their methods of feeding, and samples of roots, stalks, branches, leaves, flowers, and fruits that had been injured by them. The descriptive label accompanying each specimen contained information of practical value to the farmer and fruit-grower, and suggested methods by which they could to a greater or less degree protect their crops from the ravages of these pests.

#### SECTION OF MOLLUSKS.

The Department of Mollusks in the Museum forwarded a collection, prepared by Dr. W. H. Dall and Prof. R. E. C. Stearns. The object, as in the case of the other natural history collections, was to illustrate the principles on which the present system of classification was based. The exhibit, though occupying only about 250 feet of floor space, was very complete, and contained specimens representing all of the important families of marine mollusks not only of this country, but of other parts of the world. No attempt was made to show the land shells, as the time was too short to get up a collection, and there was not sufficient space for displaying the same, even if it had been prepared.

#### SECTION OF MARINE INVERTEBRATES.

A collection of marine invertebrates was prepared by Mr. F. A. Lucas, osteologist of the Museum. It consisted of a carefully selected series of typical representatives of the various families of sponges, corals, jelly-fishes, echinoderms, and star-fishes. As a rule, the species were represented by dried and carefully mounted specimens of the animals themselves; but such groups as could not be preserved in this way were shown by means of glass models obtained from Europe. The collection of sponges contained full series of both the ornamental and commercial species of our own country and a number of the more important commercial species from the Mediterranean Sea. The families of corals were represented by numerous species from the off-shore banks of the North Atlantic, by a number of the more attractive forms from the Gulf of Mexico, and by a collection of the typical forms from Polynesia. The growth of the red or precious coral of commerce was shown by means of models. The exhibit illustrating the families of jelly-fishes was made up exclusively of glass models, by means of which a number of the more delicate forms, including the Portuguese man-of-war, were represented.

#### SECTION OF BOTANY.

The botanical exhibit was prepared by Mr. F. H. Knowlton, Assistant Curator of Botany. It consisted of a collection of chromo-lithographs of the flowering plants and ferns of the country, and of an ex-



hibit of specimens of marine alga. The series illustrating the flowering plants included about two hundred and fifty plates, each representing a different species. It contained examples of all the principal orders, the specimens selected being such as, on account of their beauty or curious form, would be most likely to attract the attention of the public. In many of these plates all of the parts of the plant were represented, and in some instances the parts of the flower were enlarged to show the important characters of the species.

The collection of ferns was more complete. It contained eighty-one plates, on which one hundred and fifty, out of one hundred and sixty species of North American ferns were represented. These plates were taken largely from the published works of Eaton, Meehan, Sprague, and Goodale.

The collection of algæ included nearly all of the species known to occur on the Atlantic coast of the United States and many of the common species from the Pacific. It was originally intended, in addition to the above, to show separate collections of the flowers and ferns of the Ohio Valley, and also to prepare a comprehensive forestry exhibit, which should include sample woods and herbarium specimens of the principal trees of the Ohio Valley, photographs of the forest trees of the United States, and maps locating the present forest areas of the country; but the delay in the passage of the bill authorizing the exhibit and the lack of space made it impossible to do so. A collection of fossil plants to show the progress made in the study of paleontological botany was omitted for a similar reason.

#### SECTION OF MINERALOGY.

This exhibit was prepared by Prof. F. W. Clarke, Honorary Curator of the Department of Minerals, with the aid of the Assistant Curator, Mr. W. S. Yeates. It was at first intended to send a complete collection of the minerals of North America, the floor space required being estimated at 1,200 square feet, and negotiations were begun for the purchase of a collection, valued at \$5,500, belonging to Mr. Joseph Willecox, of Philadelphia, which was especially rich in North American materials, to serve as a nucleus of the exhibit. The auditing officer for the Government, however, objected to the proposed expenditure, and the plan of making a systematic exhibit was therefore of necessity abandoned. The exhibit as finally sent consisted of a single case, containing such gems and ornamental stones as were available from the collections already in possession of the Museum, with the addition of a small amount of gem material from other sources. It was limited almost exclusively to North American specimens.

#### SECTION OF TRANSPORTATION.

Some months prior to the passage of the exposition bill, Mr. J. E. Watkins, formerly with the Pennsylvania Railroad Company, was appointed curator of a newly-formed section of transportation in the Na-

tional Museum, and considerable interest was already manifested by the public in the small collection which he had succeeded in getting together. He was requested to secure additional material to supplement this collection, and to send to Cincinnati a comprehensive exhibit which should illustrate so far as practicable, the development of the principal systems of transportation in the various countries of the world.

He outlined a scheme based on the different motive powers, including man, the various animals, wind, steam, and electricity. In the division of steam transportation, special attention was given to the development of the railroad, and numerous models were secured illustrating the growth of the locomotive, the car, and the track, including rail, road-bed, and bridge. These were supplemented by a map, showing by decades the progress of railroad construction in the United States. The track exhibit was especially complete, containing scale models of nearly every style used in this country since the introduction of railroads, and also much interesting material from foreign lands. The collection contained many articles of historic interest, including models or drawings of many of the earliest locomotives and steam-boats, chief among which were Murdock's high-pressure locomotive, 1784; Trevithick's locomotive, 1804; Stevens's experimental locomotive, 1825; "Rocket" and "Stourbridge Lion," both of 1829; Hull's steam-boat, 1739; Rumsey's steam-boat, 1787; steamer "F. R. Stockton," 1839; also, the original papers, signed by Louis XVI of France in 1791, granting a patent to John Fitch for steam-boat propellers.

The systematic exhibit already referred to was supplemented by an independent series showing the early methods of transportation in the original Northwest Territory. This collection, as was expected, proved of special interest to the exposition visitors, a majority of whom were residents of Ohio and adjoining States. It included a model of the "Sandusky," 1837—the first locomotive in the State of Ohio, and of the "Orleans," 1812—the first steam-boat on the Ohio River.

While numerous collections had previously been prepared to illustrate the progress of one or another of the various systems of transportation, this was, so far as we know, the first attempt ever made to bring them all together, and to treat them systematically in one comprehensive series.

Much assistance was rendered by the Baltimore and Ohio, and Pennsylvania Railroad Companies, both of which furnished valuable collections showing the progress made on their respective lines; and by the officers of the Stevens Institute at Hoboken, N. J., who loaned various objects of historical interest and allowed photographs and models of others to be made.

#### SECTION OF NAVAL ARCHITECTURE.

This exhibit was sent for the purpose of showing the various types of vessels of the world, especially those of North America. It was prepared by Capt. J. W. Collins, Curator of the Section of Naval Archi-

ecture, and was arranged in such a way as to direct attention to the improvements in vessels of modern times over those of earlier years. The exhibit consisted chiefly of rigged models, builders' models, and pictures. It contained many objects of historic interest which attracted much attention. The historical series began with the viking ship, dating back to 800 A. D., and included the famous Columbus fleet of 1492, the Carrack of the Sixteenth century, the Spanish Galleon of the Sixteenth and Seventeenth centuries, the "Sally Constant" (the "Mayflower" of the Virginia Colony), the "Mayflower" of 1620, and the "Cumberland", sunk at Hampton Roads during the late war. The other series contained models of the kyack or skin-boat of the Eskimo, the various types of fishing vessels of different periods, the principal kinds of merchant vessels and other sailing craft, and both river and ocean steamers of modern pattern.

#### SECTION OF PHOTOGRAPHY.

The photographic exhibit was prepared by Mr. T. W. Smillie, the photographer of the National Museum. The original plan was very comprehensive, the intention being to show, in so far as practicable, the origin and growth of the science, the various processes and appliances, the different uses of photography, and the literature of the subject; but the limited time remaining after the passage of the bill made it impossible to fully carry out the scheme. The representation of origin and growth was therefore practically neglected, and the collection of appliances was of necessity somewhat limited, Mr. Smillie's attention being devoted chiefly to showing the more important processes and the various uses of the science. The collection of apparatus included portrait and landscape cameras of former years, both single and stereoscopic, a complete daguerreotypy's outfit, and a number of the more satisfactory portrait, enlarging, landscape, and detective cameras of the present day. The series of processes included the Daguerreotype, Talbotype, albumen, collodion, and gelatine negative processes; also series showing samples of plain, albumen, bromide, and other silver prints, as well as prints by the platinum, carbon, uranium, asphalt, and the numerous iron processes. Enlarged prints by the use of whey, platinum, and bromide, the collodion transparency, and transferotypes on paper, canvas, and porcelain were also exhibited.

In addition to the ordinary uses to which photography is applied, attention was directed to its great value in other directions. One series of photographs illustrated its use, in connection with the microscope, in the study of disease germs, embryology, lithology, mineralogy, etc.; and another in connection with the telescope, in making astral charts, in studying eclipses, stellar spectra, and the like. Examples were also displayed showing its value for other purposes, such as the study of botany, zoölogy, architecture, lamp flames, explosives, in the detection of criminals, in map and chart making, in recording the fluctuations in

various scientific instruments, as thermometers, barometers, and magnetic needles, in the study of special industries, in the illustration of books, and as an aid to the artist and engraver. The literature of the science was represented by a series of photographs of the title-pages of more than three hundred books and pamphlets relating to photography.

A small collection of photographs, forwarded by Mr. A. Howard Clark, curator of the section of personal and historical relics, was exhibited in this space. It consisted of a series of photographs of Washington and Grant relics in the possession of the Museum, and a collection of portraits of men prominent in the various branches of science during the past three centuries.

#### SECTION OF GRAPHIC ARTS.

This exhibit, prepared by Mr. S. R. Koehler, Curator of the Section of Graphic Arts, was intended to illustrate the various methods employed in the preparation of blocks and plates for pictorial printing. It was divided into four groups as follows :

(1) The various processes of engraving and printing from the beginning of the Sixteenth century to the present time, exclusive of the modern photo-mechanical processes; (2) The history of wood-engraving in the United States; (3) The history of etching in the United States; (4) The modern photo-mechanical processes. The first group contained prints illustrating all of the most important processes of this division, twenty-four in number, and in the case of the principal ones an attempt was made to give some idea of their history by the exhibition of carefully selected series showing the progress made in several of the leading countries including England, Germany, France, the Netherlands, and Italy, during different periods.

As both wood-engraving and etching owe much of their present popularity to American artists either by nativity or adoption, and as the Exposition was largely for the purpose of showing the progress made in the arts and sciences, it was thought desirable to prepare extensive exhibits showing separately the growth of these processes in the United States. Considerable space was given to these collections in which specimens of the work of all prominent artists in either branch were displayed. The series of wood-engravings began with samples of the earliest work of Dr. Alexander Anderson, 1818, and included engravings by no less than sixty different artists. The earliest etchings shown were those by Chapman in 1852, the bulk of the collection being made up of work executed within the past ten years. "Special stress" says Mr. Koehler was "laid upon the painter etchings (*i. e.* original work), and the smaller reproductive plates made from about 1877 to about a year or two ago, while the large plates of a more commercial character which have appeared lately were represented only by a few selected specimens." In this collection over fifty of the leading etchers of the country were represented, thirteen of them being women.

The fourth group was devoted to the modern photo-mechanical proc-



SECTION OF PHOTOGRAPHY, SMITHSONIAN EXHIBIT.



esses which are playing so important a part in the pictorial printing of the present time. Photography proper, being a photo-chemical process in which the print is made by the action of the sun's rays, was excluded, the exhibit being limited to those processes in which the printing-press is necessary to the manifolding of the picture, even though the block or plate may have been made wholly or in part by the chemical action of light. The various relief, photo-lithographic, zincographic, calographic, and intaglio processes were grouped separately, and an effort was made to show, by means of prints, the improvement made in each since its discovery; though, as the processes are usually either wholly or in part secret, no attempt was made to illustrate the methods by which the blocks were produced. Mr. Koehler has prepared a detailed catalogue of the exhibit, in which the various processes are briefly described and much valuable information regarding their history is given.

#### 4. REVIEW OF THE EXHIBITS OF THE OTHER DEPARTMENTS OF THE GOVERNMENT.

*State Department.*—The State Department exhibit was under the direction of Mr. Haughwout Howe. It was prepared for the purpose of illustrating the work of that Department. It contained many papers and other objects of great historical interest. The series of diplomatic papers included the letter addressed by Benjamin Franklin to the premier of France in December, 1776 (this being the first official communication ever sent to a foreign court by an officer of our Government) and many other equally interesting papers, among which were letters bearing the signature of many of the leading sovereigns of the world during the past century, and of almost every one now in power. The original treaty of 1782 with Great Britain, which secured to us our independence, was exhibited, as were also a number of other treaties with Great Britain, France, The Netherlands, and Turkey, each bearing the seal of its respective government, and a whale's tooth sent as a treaty by the King of the Fiji Islands. There was also a complete series of portraits of the Presidents of the United States, and another of the Secretaries of State from the time of Jefferson; also photographs of the principal Government buildings of Washington, and of certain of our foreign offices, with maps showing the location of our diplomatic and consular stations in all parts of the world. To the above were added many interesting historical relics from the library of the department, series of medals awarded to the United States, to officers of the Army and Navy, and to private citizens, and a full set of the department publications, including United States laws, diplomatic correspondence, foreign relations, consular reports, consular regulations, commercial relations, and reports on various expositions.

*War Department.*—The exhibits of this Department, prepared by Capt. H. A. Russell, Bureau of Ordnance, assisted by Lieut. E. S. Benton, Third Artillery, were among the most interesting of the Govern-

ment exhibits. They occupied a floor space of about 4,000 square feet in the eastern part of the south annex adjoining the space occupied by the Navy Department. The collections were made up of materials obtained from different sources to show the various implements of war and the improvements in the same during recent years. The older forms consisted chiefly of war relics from different parts of the world, the greater part of them being objects captured from, or surrendered by the enemy during the wars with Great Britain, Mexico, the various Indian wars, and the War of the Rebellion. These were supplemented by a large series showing many of the older styles of weapons used by our own army during the earlier years of its existence. The series of war relics contained a great variety of objects from all parts of the world, including spears, pikes, lances, bayonets, halberds, daggers, creeses, sabers, swords, scimeters, shields, armors, small-arms, and mounted and unmounted guns of various kinds. The collections showing the modern war implements were furnished in large part by the Bureau of Ordnance, and contained a sufficient number of primitive forms to show the origin and development of many of the implements of the present day. The series of small-arms began with the old match-lock, which was in turn followed by the wheel-lock, flint-lock, percussion-lock, and the breech-loading rifle. The series of larger guns contained mounted and unmounted specimens of various forms, including the muzzle-loading cannon, Napoleon gun, breech-loading steel field-piece, Gatling gun, volley gun, Krupp gun, Hotchkiss gun, and numerous other forms. There was also a large series of projectiles of various styles, a collection of fuses, and samples of the uniforms worn by soldiers of different rank in the various branches of the Army.

*Navy Department.*—The Naval exhibits, prepared under the direction of Lieut. Richard Rush, assisted by Ensigns E. A. Clements and John Gibson, occupied about 4,750 square feet of floor-space fronting on the main aisle of the Government wing of the Park building, and extending backward for some distance into the south annex. They consisted of separate collections forwarded by the Bureau of Ordnance, Bureau of Construction and Repairs, Bureau of Navigation (including the Hydrographic Office, Office of Compasses and Naval Observatory), and by the U. S. Naval Academy.

The exhibit of the Bureau of Ordnance consisted of steel breech-loading rifle guns of various sizes, Parrot rifle gun with fittings, howitzers, Gatling guns, small-arms of different patterns, specimens of projectiles and fuses, and a fully equipped torpedo-boat. The Bureau of Construction and Repair sent a very valuable collection of models of our largest and most modern war vessels, including several now building. The Bureau of Navigation exhibited a complete set of day and night signals, and the flags of all nations. The Hydrographic Office forwarded a series of instruments used in its survey work, a portable observatory with the necessary equipment for the telegraphic determination of longitude, a collection illustrating the methods of chart construction from the first



rough survey plottings to the completed chart, relief models in plaster showing the contour of the ocean-bed in various localities, and wind, current, thermal and other charts issued by this office as aids to navigation. The Office of Compasses sent a full set of mariner's compasses and other instruments for determining magnetism. The Naval Observatory exhibited a complete outfit of apparatus for astronomical work, photographs of the heavenly bodies, and a set of instruments and electric apparatus to illustrate the operations of the Observatory time system, and to show its relation to the various commercial interests of the country. During the continuance of the Exposition this department, through its Washington office, operated a time-ball by means of which the correct time was furnished daily.

*Treasury Department.*—The exhibits of this Department were made up of separate collections by several bureaus, including the Department proper, the Coast and Geodetic Survey, the Bureau of Printing and Engraving, and the Life-Saving Service. The collective exhibit, which occupied an area of 4,250 square feet at the farther end of the south annex, was under the general direction of Maj. Herman Kretz, representative, assisted by Lieut. C. H. McClellan of the Life-Saving Service, and Capt. C. O. Boutelle and Dr. J. H. Clark of the Coast and Geodetic Survey.

The exhibit of the Treasury proper consisted of a complete collection of portraits in oil of the Secretaries of the Treasury from the organization of the Department. The exhibit of the Coast and Geodetic Survey was composed in large part of the scientific instruments and other apparatus used in its magnetic, hydrographic, geodetic, and topographic work, with a full set of the maps, charts, and publications of the survey, and a set of standard weights and measures, and of the weights and measures of the metric system.

The Bureau of Printing and Engraving sent an exhibit illustrating the various kinds of work done by its employés, including the different styles of engraving, and samples of printing by both hand and steam presses. The objects selected for showing the processes were United States bonds varying in size from \$100 to \$50,000, currency notes and silver and gold certificates ranging from \$1 to \$10,000, internal revenue certificates and a collection of vignette portraits of two hundred of the leading American statesmen and inventors.

The collections sent by the Life-Saving Service consisted of a carefully selected series, illustrating by means of pictures, apparatus, and models, the methods employed by it in the saving of both life and property. It contained a complete station outfit, including self-bailing life-boat and carriage, cannon, projectile, shot-line, life-car, breeches-buoy, and a complete set of lines, ropes, blocks, and signals; also a beach wagon fully equipped for service, samples of the life-jackets and swimming-suits worn by the crew, and statistical summaries of the work accomplished during the past few years.

*Department of the Interior.*—The exhibits of this Department occupied the east front of the park building and the eastern side of the north annex. They were made up of separate collections from the Patent Office, General Land Office, Census Office, Geological Survey, Bureau of Education, Indian Bureau, Railroad Bureau, and Pension Office. The representative of this Department was the late Marcellus Gardner, who died after a brief illness while the exposition was still in progress, Prof. F. W. Clarke being designated as his successor. The bulk of the collections were sent by the Patent Office and the Geological Survey. The former sent upwards of two thousand five hundred models, which were arranged systematically by classes of inventions. Among the number were several of historic interest, including the original models of the Howe sewing-machine, the Morse electric telegraph, and the Whitney cotton-gin. This office also exhibited enlarged photographs of the public buildings of Washington, portraits of all ex-Commissioners of Patents, and of prominent inventors. The Geological Survey exhibited a series of interesting geological maps and relief models, an educational series of rocks, and an extensive collection of specimens of rocks and minerals from Yellowstone Park; also sketches in water color illustrating the different kinds of erosion, and a large collection of both plain and colored photographic transparencies of natural scenery in different parts of the country. The Land Office exhibited maps and charts of the United States, and paintings in oil relating to gold, silver, and coal mining and to oil-wells. The Bureau of Education sent collections to illustrate the methods employed in educational work among the Japanese, in schools for the blind in our own country, and the latest kitchen and kindergarten methods. It also sent models of ancient implements, portraits of ex-Commissioners and prominent American and foreign educators, with statistics of schools and colleges. The Indian Bureau forwarded a collection illustrating the methods employed by it in the education of Indian children at the Government schools, with samples of the work done by the pupils. The Census Office displayed, by means of maps, the results of the Tenth Census of the United States; and the Railroad Bureau exhibited maps showing the development of our present railroad system, with photographs of the most noted railroad bridges of the country.

*Department of Agriculture.*—The exhibits of this Department occupied about 4,000 square feet of space fronting on the main aisle of the Government wing of the Park building, opposite the Post-Office exhibit, and extending back a short distance into the northern annex. They consisted of separate collections prepared by several bureaus of the Department under the general direction of Mr. William Saunders, representative. The Botanical Division sent about two hundred species of grasses, all carefully identified, with the locality from which they came, and other information regarding them. The Forestry Division exhibited sections of the wood of about one hundred of the commercially im-

portant forest trees of the United States, with samples of their seeds. These were accompanied by maps showing the location of forests, prairies and other treeless regions of the country, and the farmer's interest in forest property. The same division sent a series of photographs illustrating the effects of deforestation, another to show the methods adopted in France for restoring the forests, and a third to direct attention to the results of tree planting in the city of Washington. The Pomological Division sent a series of colored drawings of the principal American and English fruits. The Mycological Division prepared a collection to show the various diseases of plants and the methods of treating them. The Ornithological Division sent a very interesting collection of the birds which are either directly or indirectly beneficial or injurious to agriculture, with a list of the various animals and plants upon which they feed. The Division of Animal Industries forwarded specimens illustrating the diseases of animals, their distribution, and the apparatus and methods employed in their study and treatment. The Chemical Division established a laboratory for practical work in agricultural chemistry, under the supervision of Mr. G. L. Spencer, who was in attendance at the Exposition to explain the details of the various methods. The Statistical Division sent several series of maps and charts to show, first, the distribution of the different food plants and other plants of economic interest; second, the area devoted to the cultivation of each, with statistics of production at different periods; third, the effect of price upon production; and fourth, the yearly export of agricultural products to different countries.

*Post-Office Department.*—The exhibits of this Department occupied about 2,500 square feet in the east wing of the Park building at the end adjoining the central fountain. They were prepared under the direction of Maj. R. D. S. Tyler, representative of the Department. The main feature of the exhibit was a working post-office, complete in every particular, which, through the co-operation of the postmaster at Cincinnati, supplied the necessary mail facilities for the Exposition. Adjoining this was an exhibit consisting of objects, models, and pictures illustrating the work of the several branches of the postal service. These included representations of the various methods of carrying the mails, such as the mounted carrier, sled, stage-coach, postal-car, and both river and ocean steamers, maps showing the post routes with the frequency of service and the location of the various offices, photographs of the principal post-office buildings of the United States and of several European countries, portraits of the leading post-office officials, copies of postmasters' appointments, and the uniforms worn by post-office employés of this and other countries. It contained also publications relating to the history and growth of the postal service, copies of postal treaties, collections of stamps, both domestic and foreign, samples of American and international postal cards, postal notes, and money-

orders, historical series of stamping tools, mail-bags, letter-boxes, locks, and other articles. There was also an exhibit showing the work of the Dead-Letter Office, and, in addition, full statistics of the work of the Post-Office Department in its various branches. A very interesting addition to the exhibit was a machine for the manufacture of stamped envelopes, forwarded and operated by the owners. This machine automatically gummed, stamped, folded, counted, and bunched envelopes at the rate of about 4,500 per hour.

*Department of Justice.*—The exhibits of this Department occupied about 750 square feet of floor space to the right of the Department of State in the south annex. They were under the direction of Col. Cecil Clay, representative, who prepared several series of pictures to illustrate the work of the Department. One of the features of the exhibit was a collection of large portraits in oil of all the Attorneys-General from the establishment of the Government. Another series of pictures showed the principal court buildings, with a list of the court officers in each judicial district, statistics of the work of the United States courts from 1883 to 1887, inclusive, and statistics of the legal business of the United States Supreme Court and the Court of Claims. A full set of the publications of the Department was also exhibited.

*The United States Fish Commission.*—A very popular and instructive display was made by this Department under the direction of Capt. J. W. Collins and Dr. T. H. Bean. It occupied a space of about 3,000 square feet at the extreme end of the north annex. The exhibit consisted of collections illustrating the methods employed by the Commission in its scientific investigations, in its fish-cultural work, and in its study of the commercial fisheries. One of the most attractive features was a series of aquaria containing live fishes and other aquatic animals and plants. Among the fishes were many of the economic species of the Ohio River basin and a number of interesting forms from other parts of the country. The Division of Scientific Inquiry was represented by photographs of its zoological stations, models of its vessels for exploration, and by samples of its apparatus for biological and physical research, such as nets, dredges, sounding apparatus, thermometers, etc. It also exhibited a large series of marine animals from various localities and different depths. The Division of Fish-culture showed, by means of models, the method adopted by the Commission in taking the eggs from the parent fish for purposes of artificial propagation, and by apparatus supplied with live eggs of different species the methods employed in hatching them and in rearing the fry. This exhibit was supplemented by a complete fish-cultural outfit, including apparatus for collecting and transporting the eggs, hatching-troughs, boxes and jars suitable for developing eggs of the various species, models of cars and samples of tanks, cans, and pails used in the transportation of fry, rearing and feeding troughs, samples of fish-food, and models and pho-

tographs of the more important fish-cultural stations. The Division of Fisheries exhibited plaster casts of all of the principal food fishes, papier-maché casts of the porpoises, the oil and bone whales, specimens of the edible mollusks of the country, and maps showing the distribution of the fishes of greatest commercial importance. It also sent photographs of fishermen engaged in different branches of the sea and river fisheries, as well as pictures of their homes and villages, and, in addition, a series of pictures showing the various forms of fishing-vessels and boats, and the apparatus and methods employed in the cod, halibut, herring, mackerel, and other fisheries, and statistical charts showing the yield in different years.

## APPENDIX B.

REPORT UPON THE EXHIBIT OF THE SMITHSONIAN INSTITUTION, INCLUDING THE UNITED STATES NATIONAL MUSEUM, AT THE CENTENNIAL EXPOSITION, MARIETTA, OHIO, JULY 16 TO 21, 1888.

BY W. V. COX.

The Smithsonian Institution and the National Museum participated in the Centennial Exposition at Marietta, in conformity with the President's order of July 11, 1888, which permitted the head of any Department to send such exhibits to Marietta, as, in his discretion, it was proper and expedient to remove.

The executive order, together with a letter from the Hon. John Eaton, former Commissioner of Education, and Public Resolution No. 26, are given herewith.

EXECUTIVE MANSION, *July 11, 1888.*

The action of the State Department, as indicated in the extract from the order issued by the said Department submitted to me, is approved to the extent of permitting the head of any Department to determine what, if any, of the exhibits from his Department should be sent to Marietta, pursuant to the provisions of the act, and to cause the removal of the same to Marietta, in charge of some careful and discreet person, if the appropriation allowed his Department is sufficient, and if in the discretion of the head of said Department such removal is proper and expedient.

GROVER CLEVELAND.

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WASHINGTON, D. C., *July 11, 1888.*

SIR.—I have the honor to invite your attention to the provision in the act relating to the Exhibition in Cincinnati, placing within your discretion the approval of an exhibit of certain articles at Marietta, Ohio, during the Centennial celebration there. The time for the Exhibition is short, only a few days now intervening. Would it be in accordance with your judgment to provide the action of the State Department already taken for the guidance of the other Departments in the exercise of the discretion committed to you by law?

Very respectfully, your most obedient servant,

JOHN EATON.

The PRESIDENT.

[Public Resolution No. 26.]

JOINT RESOLUTION declaring the true intent and meaning of the act approved May 28, 1888.

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That it is the true intent and meaning of the act of Congress approved May 28, 1888, by the President of the United States, entitled "An act making appropriation to enable the several Executive Departments of the Government, and the Bureau of Agriculture, and the Smithsonian Institution, including the National Museum and the Commission of Fish and Fisheries, to participate in the Centennial Exposition of the Ohio Valley and Central States, to be held at Cincinnati, Ohio, from July 4 to October 7, 1888," that the President of the United States may, in his discretion, make an order directing that any documents, papers, maps, not original, books, or other exhibits which properly and pertinently relate to the establishment of civil government in the territory northwest of the Ohio River, may be sent upon an Executive order from any of the several Departments in said act named, or from the exhibits now at Cincinnati; and that the appropriation of money in said act to defray the expenses of such exhibits may be made applicable, in so far as the President of the United States may direct, to the payment of the expenses of the care and transportation to and return of such exhibits from Marietta; and the same shall be paid from such fund heretofore set apart for each Department, as the President may order. Nor shall anything in this act be so construed as to prevent the purchase of suitable materials and the employment of proper persons to complete or modify series of objects and classes of specimens, when, in the judgment of the head of any Department, such purchase or employment, or both, is necessary in the proper preparation and conduct of an exhibit. Nor to authorize the removal from their places of deposit in Washington of any original paper or document, or laws or ordinances whatever.

Approved, July 16, 1888.

Owing to the absence in Europe of Professor Langley, the secretary of the Smithsonian Institution, Mr. G. Brown Goode, the acting secretary and representative to the Exposition, was unable to leave his official post in Washington. I was therefore delegated to represent Professor Goode at the Marietta Centennial Exposition.

The executive order permitting the sending of exhibits to Marietta was not received until noon of July 14, the day before the opening of the Centennial, and at 9.40 p. m. of that day, I, together with Mr. Paul Brockett, took the first express train at Washington, with thirty-one boxes, containing 7,327 pounds of exhibits in charge.

Arriving about noon of the 15th, these exhibits were conveyed to the City Hall, and by 2.30 a. m. the following day, the centennial anniversary of the inauguration at Marietta of General St. Clair as the governor of the "Northwest Territory," the display of the Smithsonian Institution and the National Museum was in order and ready for examination.

It was thought that students of Marietta and the archæologists would be interested in a collection illustrative of the arts of the Haida Indians of Queen Charlotte Archipelago, British America, as these Indians are in the same condition of culture as the builders of the earthworks at Marietta, and so, to give a general idea of the arts of the ancient mound-

builders, a collection composed of the following objects was brought from the National Museum.

Haida boxes.	Ammunition bag.	Medicine-man's clapper.
Carved canes.	Horn spoon.	Whale-oil dish.
Slate totem posts.	Gambling sticks.	Food dish.
Stone knife.	Baskets.	Carved images.
Slate knives.	Carved dishes.	Carved masks.
Slate plate.	Carved wooden spoon.	Model of Haida house.
Carved slate box.	Carved horn spoons.	Model of Haida boat.
Slate dish.	Rattles.	Mask.
Carved war club.	Wooden dipper.	Stone maul.
Horn dishes.	Mask, Bilhula.	Stone maul-head.
Carved dipper.	Fish hook.	Bottle covered with woven grass.
Painted hat.	Wooden spoon.	Unit boxes of Haida carvings, dishes, etc.
Chief's wooden hat.	Wooden fork.	
Stone pipe.	Papoose cradle.	

One of the original Audubon plates, from which was printed "Birds of North America," was exhibited, as were also eighteen lithographs from Goode and Kilbourne's work, "The Game Fishes of the United States." These lithographs, the list of which is appended, were greatly admired:

Grayling, <i>Thymallus tricolor</i> .	Brook trout, <i>Salvelinus fontinalis</i> .
Perch, <i>Perca americana</i> .	Blue-fish, <i>Pomatomus saltator</i> .
Weakfish, <i>Cynoscion regale</i> .	Sheep's-head, <i>Archosargus probatocephalus</i> .
Red snapper, <i>Lutjanus blackfordi</i> .	Pompano, <i>Trachynotus carolinus</i> .
Sea bass, <i>Serranus atrarius</i> .	Rockfish, <i>Roccus lineatus</i> .
Lake trout, <i>Salvelinus namaycush</i> .	Spanish mackerel, <i>Scomberomorus maculatus</i> .
Salmon, <i>Salmo salar</i> .	Channel bass, <i>Sciaenops ocellata</i> .
King-fish, <i>Menticirrus nebulosus</i> .	California salmon, <i>Onchorynchus chouicha</i> .
Mackerel, <i>Scomber scombrus</i> .	
Bonito, <i>Sarda sarda</i> .	

The following medals, made of copper at the mint from the original dies, were on exhibition. These medals are of great historic interest, the originals, of gold and silver, having been struck by order of Congress in commemoration of national events, or in recognition of heroic actions in the history of our country, thus furnishing an enduring record, and a means of familiarizing future generations with the features of American heroes of every class of events, military, naval, civil, and scientific.

#### MILITARY AND NAVAL MEDALS.

General Washington, siege of Boston.	Col. George Croghan, Fort Stephenson.
General Gates, Saratoga.	General Harrison, the Thames.
Maj. Harry Lee, Powles Hook.	Governor Isaac Shelby, the Thames.
General Morgan, Cowpens.	General Winfield Scott, Chippewa and Niagara.
Col. J. E. Howard, Cowpens.	Capt. Stephen Decatur, naval victory.
Col. De Fleury, Stony Point.	Captain Bainbridge, naval victory.
Capt. Paul Jones, naval victory.	Capt. Jacob Jones, naval victory.
Captain Truxton, naval victory.	Captain Lawrence, naval victory.
Capt. Isaac Hull, naval victory.	General P. B. Porter, Chippewa, Niagara, Erie.
Commodore Preble, naval victory.	
Col. W. A. Washington, Cowpens.	



General Jacob Brown, Chippewa, Niagara, Erie.  
 General James Miller, Chippewa, Niagara, Erie.  
 General E. W. Ripley, Chippewa, Niagara, Erie.  
 Lieut. E. R. McCall, naval victory.  
 Capt. O. H. Perry, Lake Erie (three medals).  
 General Jackson, New Orleans.  
 Lieutenant Burrows, naval victory.  
 General Zachary Taylor (three medals), Monterey, Buena Vista, Rio Grande.  
 Capt. J. D. Elliott, Lake Erie.

Capt. Warrington, naval victory.  
 Capt. Blakely, naval victory.  
 Captain Maedonough, Lake Champlain.  
 General Winfield Scott (two medals), Mexico.  
 General Ulysses S. Grant, Fort Donelson, Vicksburg, Chattanooga.  
 General Alex. Macomb, Plattsburg.  
 Capt. R. Henley, Lake Champlain.  
 Lieutenant Cassin, Lake Champlain.  
 Capt. J. Biddle, naval victory.  
 Capt. C. Stewart, naval victory.  
 General E. P. Gaines, Lake Erie.

## MISCELLANEOUS MEDALS.

Diplomatic medal.  
 Loss of brig *Somers*.  
 Wreck of steam-ship *San Francisco*.  
 Commander D. N. Ingraham, release of Coszta.  
 Two shipwreck medals.  
 Japanese embassy.  
 Dr. Fred. Rose, heroic conduct.  
 Colonel Armstrong, Kittanning.  
 Cornelius Vanderbilt, patriotism.  
 John Horn, jr., heroic conduct.  
 G. F. Robinson, heroic conduct.  
 Commodore M. C. Perry, treaty with Japan.  
 Loss of steam-ship *Metis*.  
 Emancipation proclamation.  
 Prof. Louis Agassiz, scientific medal.  
 Coast survey.  
 Pacific Railway, the oceans united.  
 "Let us have Peace," U. S. Grant.  
 Cyrus W. Field, completion of Atlantic cable.

President J. Adams, Indian peace medal.  
 President Thomas Jefferson, Indian peace medal.  
 President Madison, Indian peace medal.  
 President Monroe, Indian peace medal.  
 President J. Q. Adams, Indian peace medal.  
 President Jackson, Indian peace medal.  
 President Van Buren, Indian peace medal.  
 President Tyler, Indian peace medal.  
 President Polk, Indian peace medal.  
 President Taylor, Indian peace medal.  
 President Fillmore, Indian peace medal.  
 President Pierce, Indian peace medal.  
 President Buchanan, Indian peace medal.  
 President Lincoln, Indian peace medal.  
 President Johnson, Indian peace medal.  
 President Grant, Indian peace medal.  
 President Hayes, Indian peace medal.  
 President Garfield, Indian peace medal.  
 President Arthur, Indian peace medal.

A large survey map, which showed the geological formation of North America through the area of the United States, was exhibited, as were also fine photographs of the Smithsonian Institution, National Museum, State, War, and Navy Departments, Patent Office, and Executive Mansion. These photographs were enlargements,  $4\frac{1}{2}$  by 7 feet in size, made by the photographer of the National Museum, by means of the electric light, and are among the largest ever made.

Many autotypes of pictures by the old masters, and by the most famous modern painters, were shown on the walls of the exposition room. These pictures, the list of which is given here, were constantly surrounded by appreciative groups.

Group of Saints, Orcagna.  
 Procession of Saints, Fra Angelico.  
 The Crucifixion, Fra Angelico.  
 Pieta, Van der Weyden.

The Virgin and St. Elizabeth, Lippi.  
 St. Michael, Perugino.  
 St. Bernard and the Virgin, Perugino.  
 Infant Jesus, Virgin and Saints, Perugino.

- The London Madonna, Perugino.  
 The Coronation of the Virgin, Botticelli.  
 Portrait, Francia.  
 The Nativity, Memling.  
 Christ preaching to the Apostles, Leonardo da Vinci.  
 A portrait, Leonardo da Vinci.  
 Virgin and Child, Albertinelli.  
 The Erythrean Sibyl, Michael Angelo.  
 The Delphic Sibyl, Michael Angelo.  
 The Prophet Jeremiah, Michael Angelo.  
 The Prophet Zacharias, Michael Angelo.  
 Four Frescoes from the Sistine Chapel, Michael Angelo.  
 The Manchester Madonna, Michael Angelo.  
 Entombment of Christ, Titian.  
 The Virgin with a Rabbit, Titian.  
 St. Sebastian, Sodoma-Bazzi.  
 The Sistine Madonna, Raphael.  
 Madonna della Sedia, Raphael.  
 The Miraculous Draught of Fishes, Raphael.  
 Dispute Concerning the Sacrament, Raphael.  
 La belle Jardinière, Raphael.  
 Holy Family, with Catharine, Elizabeth, and the Infant Jesus, Andrea del Sarto.  
 The Madonna of St. Francis, Andrea del Sarto.  
 Innocence, Romano.  
 Ecce Homo, Correggio.  
 Die heilige Nacht, Correggio.  
 Picture from the Exposition du Palais Bourbon, Palma.  
 Descent from the Cross, Carracci.  
 Nude figure seated, Carracci.  
 The Annunciation, Guido Reni.  
 Deianira and Nessus, Guido Reni.  
 The Little Princess, Moreelse.  
 Descent from the Cross, Rubens.  
 Henri IV installing Marie de Medici as Regent, Rubens.  
 The Triumph of Youth, Rubens.  
 The Rape of Antiope, Rubens.  
 Fish Woman, Hals.  
 Saint Cecelia, Domenichino.  
 Victorious Love, Domenichino.  
 Theseus finding his father's sword, Poussin.  
 Madonna, Van Dyck.  
 Portrait, Van Dyck.  
 The Good Shepherd, Champaigne.  
 The Three Ages of Man, Sassoferrato.  
 The Abbess, Rembrandt.  
 Portrait of Himself, Rembrandt.  
 The Temptation of St. Anthony, Teniers.  
 Village Festival, Teniers.  
 Old Woman at a Window, Gerard Dow.  
 Winter Scene in Holland, Van Ostade.  
 War, Salvator Rosa.  
 Christ appearing before Mary Magdalene, Le Sueur.  
 The Field, Potter.  
 Group of Sheep, Potter.  
 Cows and Sheep, Potter.  
 Wandering Musician, Jan Steen.  
 Study from Nature, Metzua.  
 A Dead Calm, Van de Velde.  
 Marine View, Van de Velde.  
 Louis XIV, Rigaud.  
 "Gilles" or "Pierrot," Watteau.  
 The Chocolate Girl, Liotard.  
 Pastoral Subject, Boucher.  
 The Village Groom, Grenze.  
 A Portrait, Greuze.  
 Portrait of M. Rabuti, Grenze.  
 Picture from the Musée du Louvre, Grenze.  
 The Horatii, David.  
 Madame Recamier, David.  
 The Marquise d'Orvilliers, David.  
 Portrait of the Artist and her Daughter, Vigée Le Brun.  
 The Burial of Attala, Girodet.  
 Daphnis and Chloe, Gerard.  
 Edipus and the Sphinx, Ingres.  
 Joan of Arc, Ingres.  
 Arab Hunter, Vernet.  
 The Wreck of the Medusa, Gericault.  
 Willows at Marseilles, near Beauvais, Corot.  
 The Princes in the Tower, Paul Delaroche.  
 The Forest at Fontainebleau, Sunset, Rousseau.  
 The Shore at Antibes, Meissonier.  
 Napoleon, Meissonier.  
 A Shepherd, Millet.  
 The Reaper's Repast, Bida.  
 The Return of the Gleaners, Breton.  
 Tobit and the Angel, Doré.

The composition of the human body, its daily income and expenditure, and casts, in plaster, of the articles of food ordinarily used as a day's rations, were shown, as well as specimens of the different chemi-

cal elements and compounds of the body, so far as possible to science to obtain or represent them. This exhibit, which is explained by the accompanying list of objects shown, and by copies of the large descriptive labels, attracted perhaps more attention than any other sent by the Museum, curious and interested crowds being seen at all times examining it.

In addition to the collections from Washington, Mr. J. E. Watkins, Curator of the Department of Transportation in the National Museum, who was in attendance at the Cincinnati Exposition, was telegraphed to bring from his department at that Exposition such models, engravings, and paintings as could be spared, illustrative of the methods of transportation adopted by the early settlers in America, and of the early navigation of the Ohio River, together with the means of reaching the Ohio Valley from the sea-board, from aboriginal times to the introduction of the locomotive.

This exhibit, which was placed in the center of the hall and directly in front of the entrance, proved very attractive, so much so, in fact, that it was found necessary to protect it with a railing from eager but not unfriendly hands, that frequently took the birch-bark canoe on impromptu journeys around the room, and sometimes tried to set the machinery to work in the models of the antiquated steam-boats on exhibition.

The transportation exhibit may be briefly described as follows :

- (1) Type of birch-bark canoe used on the Ohio River by the Indians.
- (2) Engraving of ship *Sally Constant*, which brought the first settlers in Virginia to Jamestown, among whom were many of the ancestors of the pioneers of the "Northwest Territory."
- (3) Boat similar in construction to that built by Captain Devoll in 1787, and known as the *Mayflower of the Ohio*. Captain Devoll having been a constructor of whaling ships in Massachusetts, the lines of the hull are similar to boats of that time constructed in the east.
- (4) The *Orleans*, 1812, the first steam-boat on the Ohio River; constructed in 1811 at Pittsburgh. Fulton and Livingstone, having met with success in introducing the steam-boat on the Hudson, four years later transferred their sphere of labor to the western waters. This boat was on her way to New Orleans during the earthquake of 1812, and, reaching there safely, continued to run between that point and Natchez until July 14, 1814, when she was sunk off Baton Rouge. Her machinery, however, was saved, and with a new boiler was transferred to another boat, which was called the *New Orleans*.

The Baltimore and Ohio Railway in 1828 began to lay its tracks from Baltimore toward the Ohio River. The steam locomotive at that time was not in successful operation, and many experiments were made in the construction of cars and in the application of power. Models illustrating these experiments were also shown.

- (5) Closed passenger-car with weather-boarded sides, and windows similar to those in dwelling-houses; built to be drawn by horses.

(6) Double-deck, stage-body car, also to be drawn by horses.

(7) Horse-power tread-mill car. This car was driven at the rate of 12 miles per hour by a single horse in the tread-mill, which was geared to the wheels by a band.

(8) Sail-car, with which experiments were made with a view to utilize the power of the wind, as in boats.

(9) First car drawn by a locomotive on the Baltimore and Ohio Railway.

(10) Engraving of first train of cars drawn by a locomotive in the State of New York, on the line of communication between Boston and New York.

(11) Engraving of the first passenger-car on the Camden and Amboy Railway; used on the route from New York to Philadelphia.

(12) Model of canal packet-boat; used on the Pennsylvania Canal on the through route from Philadelphia to Pittsburgh.

(13) Model of canoe used by the Haida Indians.

(14) Indian of the Northwest returning from the hunt with a bunch of ptarmigan. The full-sized figure illustrates the manner in which snow-shoes are used to aid individual movement.

In the Exposition Hall, besides the exhibits sent by the Smithsonian Institution and the National Museum, was the interesting display of the State Department. This embraced copies of the most important treaties made by the United States, a fac-simile of the Declaration of Independence, photographs of several historical pictures of much interest, and pictures of most of the Presidents of the United States.

The U. S. Geological Survey had an attractive exhibit of photographs and transparencies, one of the finest of the latter being a view of the Grand Cañon of Colorado, looking west. The photographs of dwellings in the Zuñi villages, showing the mode of entrance to the houses, and giving an accurate idea of many features in the life of a people just now the object of so much interesting research, attracted the attention of ethnologists and others.

In the armory building of Marietta the local display proper was to be seen. Here one could find relics of the mound-builders and of the Indian tribes who disappeared at the coming of the white man. Then there were precious heirlooms of the first families of the Northwest territory, in the shape of antique furniture, clocks, books, deeds, pictures, needle-work, old china, silver, pewter, spinning-wheels, and watches.

There were Washington relics, there were La Fayette relics, there were many articles that had belonged to General Israel Putnam, and to his grandson, the Israel Putnam who was one of the pioneers of Ohio, and there were relics of many other of Ohio's most distinguished children, civil and military; there were also many articles that had been the property of Burr and of Blennerhassett. The historian and the relic hunter alike were attracted by this remarkable collection.

## APPENDIX C.

### BIOGRAPHICAL NOTICE OF JAMES STEVENSON.

James Stevenson was born in Maysville, Ky., December 24, 1840. His father, who settled in Kentucky early in the century, was a Virginian, and, it is believed, probably of that hardy Scotch-Irish family of Indian fighters and riflemen to which belonged Col. Hugh Stevenson, of the Berkeley Riflemen, and his brothers, Col. Richard and Col. Valentine Stevenson, all soldiers of the Revolution. He was a vigorous, active boy, and at an early period showed an enthusiasm to explore the Rocky Mountain region and to see the Indian in his home. He read all the books of travel and adventure he could borrow, and at the age of thirteen he ran away from home and joined a party of the Hudson Bay Fur Company's traders, bound up the Missouri River. Dr. F. V. Hayden was a passenger on the same packet, on his way to explore the fossiliferous regions of the Upper Missouri and Yellowstone. He noticed that Stevenson had taste for natural history, and invited him to join him in his work.

The boy showed tireless energy in collecting objects of natural history and ethnology along the buttes, mesas, and river benches of the *Mauvaises Terres*, and in time became an explorer of intrepid courage and indefatigable zeal.

He remained in the region of the Upper Missouri and the Yellowstone mouth for three years, and became acquainted with the Crows, Blackfeet, Gros Ventres, and other Indians, up to that time little changed by intercourse with white men, and acquired a knowledge of their customs and characteristics.

In 1857 the Pacific Railroad surveys of the Government having been fairly begun, Stevenson, still an assistant of Professor Hayden, was attached to Lieut. G. K. Warren's party, and subsequently to that of Lieut. F. W. Reynolds. At this time he made a useful collection of fossil mammals and reptiles, and another illustrating the zoology and botany of the "Bad Lands." The labor and exposure incident to exploration at that time can not be properly appreciated in these days of rapid and luxurious travel.

In 1861 James Stevenson enlisted as a private soldier in the Thirteenth Regiment, New York Volunteers, and remained in the service until 1865. He took part in all the heavy battles of the Army of the

Potomac and won an officer's commission. After the war he again joined Professor Hayden in his exploration of the Upper Missouri, under the auspices of the Philadelphia Academy of Natural Sciences.

Soon after the return of peace, the Pacific Railroad project was taken up by Congress. Among the Western members of the House who became its advocates was General John A. Logan, who took the lead in combating the statement that the Territories had no coal. He maintained that coal existed in abundance, and that it could be located by a proper geological survey of the region. Stevenson was his principal authority for his statements, and urged upon him the necessity for such surveying works. After consultation with Professor Baird, General Logan, in the winter of 1867, proposed an amendment to the sundry civil bill authorizing the organization of a geological survey under the direction of Professor Hayden, and by a vigorous effort secured its passage.

The legislation of 1867 was the beginning of the geological and geographical survey of the Territories. Stevenson was made the executive officer of the new organization, and retained this position during its entire existence.

His tastes were rather toward ethnology than geology, and his winters among the Blackfoot and Sioux Indians were occupied in part in studying their customs and their dialects.

From 1868 to 1878 he took part in all the adventures of the Hayden survey; with it he explored almost all of the Territories, and had a share in bringing to light the hidden marvels of Yellowstone Park, and in urging its retention as a public reservation. He followed the great rivers of the continent to their sources, and discovered a new path across the Rocky Mountains. He ascended the Great Teton, and verified an Indian tradition of the presence of a stone altar upon its top.

His frontier experience fitted him for understanding thoroughly the requirements of explorers in the field. He was a good judge of character and showed much tact in planning and expediting the operations of the mixed trains engaged in the survey work. He led working parties of experts trained in topography, geology, and natural history over the unexplored regions of Nebraska, Colorado, New Mexico, Montana, Wyoming, Idaho, Utah, and Dakota.\*

When the various geological and geographical surveys were consolidated in 1879, Mr. Stevenson became associated with the operations of the Bureau of Ethnology, under Major Powell, and continued his investigations of the Indians. When Clarence King resigned the directorship of the new geological survey and Major Powell was selected to succeed him, Mr. Stevenson was appointed the executive officer of the latter organization. In this new trust he had charge of outfitting and

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\* His work was chiefly in the following regions: 1851-'53, Upper Missouri. 1859-'60, Wyoming and Montana (then Nebraska), with Reynolds. 1866, Bad Lands in Dakota, with Hayden. 1867, Nebraska, with Hayden. 1868, Wyoming, with Hay-

supplying its parties in the field and of its business operations in the East. His relations with the members of both Houses of Congress, during the many years he appeared before that body in the interests of the U. S. Geological Survey and other scientific organizations, were always pleasant, and the members of Congress, of both parties, had faith in his integrity. Senator Edmunds once declared on the floor of the Senate, when some Senator proposed a reduction in the salaries of the director and executive officer of the Geological Survey, that Mr. Stevenson was "one of the best workers in the world."

In 1879 he began the exploration of the prehistoric cliff and cave dwellings of Arizona and New Mexico, unearthing an extended series of buried ruins and making a large invaluable collection of ancient pottery, costumes, weapons, and ceremonial and industrial utensils, now in the National Museum. He made a study of the religious practices of the Zuñi tribe of Indians and the history and folk lore of the Navajos and the Moquis. In this latter work he had a faithful assistant in Mrs. Stevenson, who made an especial study of the domestic and religious side of the Indian character. It was a source of regret to Mr. Stevenson that his duties with the Survey prevented him from completely publishing the investigation he had planned, and it remains for his widow to complete for publication the results of the work which they began together.

In 1886, while exploring some of the highest mesas of Arizona and New Mexico, he was attacked by that singular disease of those regions known as "mountain fever," from which he partially recovered after his return to the East. In spite of the remonstrances of his friends he spent the season of 1887 among the ruins in the Tewan Mountains of New Mexico and at the pueblo of Sia, where he found a rich field for study. He discovered that the Sia, like the Moki, hold ceremonials with the rattlesnake (a secret most jealously guarded by these Indians), and he succeeded in obtaining one of the ancient vases in which the snakes are each year gathered. His collection of idols and fetishes from Sia is the rarest yet obtained from any pueblo.

When he came East in November he was suffering from valvular heart trouble, and, after a brave fight for life, died in New York City July 25, 1888.

The full story of his useful life would fill a book. His resources when leading a party through a wild district were limitless, and he was always ready to meet, by quick action and apt understanding, any accident or miscarriage in the field. One of his associates tells the following incident, which illustrates the readiness of his faculties:

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den. 1869, Colorado and New Mexico, with Hayden. 1870, Wyoming and Utah, with Hayden. 1871, parts of Utah, Idaho, Montana, and Yellowstone Park. 1872, parts of Idaho, Wyoming, and Yellowstone Park. 1873-'76, Colorado, under Hayden. 1877, Wyoming and Utah, with Hayden. 1878, Yellowstone National Park, with Hayden. 1879-'87, among the Navajos and Pueblos of New Mexico and Arizona and Mission Indians of Southern California, under Major Powell.

In July, 1871, the Hayden survey reached the shores of the Yellowstone Lake, and as it came into camp for the first time on its banks, the beautiful sheet of water courted navigation. No provision whatever had been made for building a boat—the thought had not entered the minds of Dr. Hayden or Mr. Stevenson when they outfitted for the exploration, and nothing therefore was taken into the luggage of the party and its pack-train for such a contingency. As the members of the party gazed with delighted eyes upon the broad expanse of this big mountain lake, a general desire to sail out to the islands upon its waters was loudly expressed, coupled with regret that no fit means for so doing was available, rafting being wholly inadequate. Stevenson said nothing, but quietly took the cook's axe, called two of the packers and went with them into a thicket of young birch and spruce trees, where he speedily trimmed out the ribs and gunwales of a double-ended and skiff-shaped boat. He lashed these into place and then took one of the cargo covers—a large square sheet of heavy canvas—with which he neatly covered this rude frame. A small mast was stepped, and a pair of oars adjusted as they were hewn out, together with a large steering sweep. He began this work about 2 o'clock in the afternoon; just before nightfall or dark (about 9 o'clock then and at that place) the little boat, some 13 feet in length, was launched, and Mr. Stevenson pushed out from the shore for a brief trial trip. The boat was a perfect success, and by its aid a complete hydrographic survey was made before the party left that region.

In ways like this he overcame the many unforeseen obstacles which arise in the path of a scientific exploring party. Climbing mountains, winding through forests and cañons, crossing ugly, treacherous streams and arid plains, in heat or in cold, in rain or in sunshine, or meeting hostile savages, Mr. Stevenson was always in the front, always ready, and always genial, and always the quiet and resolute master of the situation.

Three descriptive and illustrated catalogues of archæological and pueblo collections were prepared by Mr. Stevenson and were published by the Bureau of Ethnology. He also prepared for publication papers relating to the myths, ceremonials, and sand paintings of the Navajo Indians, and to the archæological remains of the southwest.

The death of James Stevenson was a positive loss to the institutions to which he devoted his life, viz, the U. S. Geological Survey, National Museum, and Bureau of Ethnology, and to scientific explorations. No offers however flattering could allure him from his life's work. He labored from a love for truth, and was ever ready to lend his aid to any movement for the advancement of science. His modesty and unselfishness won for him the esteem of all who knew him.



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APPENDIX D.

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LISTS OF INSTITUTIONS AND FOREIGN AND DOMESTIC  
LIBRARIES TO WHICH IT IS DESIRED TO SEND  
FUTURE PUBLICATIONS OF THE  
NATIONAL MUSEUM.

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I.—LIST OF INSTITUTIONS UNDER STATE CONTROL, AND OF COLLEGES OF LIBERAL ARTS, TO WHICH IT IS DESIRED TO SEND FUTURE PUBLICATIONS OF THE NATIONAL MUSEUM.

[The Reports of the Commissioner of Education are, as a rule, the authority for the official name of an institution, and for the number of volumes in a library. Libraries the names of which are printed in *italics* contain more than 10,000 volumes. The figure [i] after a name indicates that it already receives regularly the *Smithsonian Report*; [ii] that it receives the *Report* and the *Smithsonian Miscellaneous Collections*; [iii] that it receives the two preceding and the *Smithsonian Contributions to Knowledge*. The letter D after a name indicates that it is one of the 400 libraries known as depositories of public documents, and thus receives regularly all public documents published by the Government. The letter X after a name indicates that it is one of the 800 libraries officially designated to receive certain classes of documents, including the publications of the U. S. Geological Survey.]

Note: This list is not intended to indicate the distribution of Smithsonian publications, but shows incidentally what publications of the Institution are sent to the libraries mentioned.

ALABAMA.

STATE LIBRARIES.

*Alabama State and Supreme Court Library.* Montgomery. D

STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Alabama Historical Society (1851). Tuscaloosa. [i]

STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Alabama Agricultural and Mechanical College (1872). Auburn. [ii] D

Agricultural Experiment Station (Agricultural and Mechanical College), Auburn.

Canebrake Agricultural Experiment Station (Agricultural and Mechanical College). Uniontown.

University of Alabama (1819-'21). (University P. O.) Tuscaloosa. [iii] D

Law Department, University of Alabama. Tuscaloosa.

COLLEGES AND UNIVERSITIES.

Howard College. (East Lake P. O.) Birmingham. [iii] D

Selma University. Selma.

Southern University. Greensborough. [iii] D

*Spring Hill College.* (Spring Hill P. O.) Mobile. [ii] D

STATE NORMAL SCHOOLS.

Alabama Normal College for Girls. (White.) Livingston. [i]

Florence State Normal School. (White.) Florence. X

Huntsville State Normal and Industrial School. (Colored.) Huntsville. [i]

Jacksonville State Normal School. (White.) Jacksonville. D

Montgomery State Normal University. Montgomery.

Troy Normal School. Troy. X

Tuskegee State Normal School. (Colored.) Tuskegee. [i]

ARIZONA.

STATE LIBRARIES.

Territorial Library. Phoenix. [i] D

STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Arizona (18'9). Tucson.

College of Agriculture (University of Arizona). Tucson.

## STATE NORMAL SCHOOLS.

Territorial Normal School. Tempe.

## ARKANSAS.

## STATE LIBRARIES.

*Arkansas State Library.* Little Rock. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Arkansas Historical Society. Little Rock.

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Arkansas Industrial University. (1868-'72.) Fayetteville. [ii] D

Arkansas Agricultural Experiment Station (Arkansas Industrial University). Fayetteville.

Substation Arkansas Agricultural Experiment Station (Arkansas Industrial University). Newport.

Substation Arkansas Agricultural Experiment Station (Arkansas Industrial University). Texarkana.

Substation Arkansas Agricultural Experiment Station (Arkansas Industrial University). Pine Bluff.

## COLLEGES AND UNIVERSITIES.

Arkansas College. Batesville. X

Cane Hill College. Boonsborough. [i] X

Little Rock University. Little Rock. [i]

Philander Smith College. Little Rock.

## STATE NORMAL SCHOOLS.

Branch Normal College of Arkansas, Industrial University. Pine Bluff. D

## CALIFORNIA.

## STATE LIBRARIES.

*California State Library.* Sacramento. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

California Historical Society. San Francisco.

*California Academy of Science.* (1854.) San Francisco. [iii]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

*University of California.* (1868-'69.) (Berkeley P. O.). San Francisco. [iii] D

Lick Observatory (Astronomical Department, University of California). Mount Hamilton. [iii]

College of Agriculture of the University of California (1866-'68.) (Berkeley P. O.). San Francisco.

Agricultural Experiment Station of College of Agriculture (Berkeley P. O.). San Francisco.

## COLLEGES AND UNIVERSITIES.

Hesperian College. Woodland.

Napa College. Napa City. [i]

Pacific Methodist College. Santa Rosa.

Pierce Christian College. College City. [i]

Saint Augustine, College of. Benicia.

*Saint Ignatius College.* San Francisco. [ii]

Saint Vincent's College. Los Angeles.

San Joaquin Valley College. Woodbridge.

*Santa Clara College.* Santa Clara. [iii]

University of the Pacific. San José. [ii]

University of Southern California. Los Angeles.

## STATE NORMAL SCHOOLS.

Chico State Normal School.	Chico.	
Los Angeles State Normal School.	Los Angeles.	
Normal Department of Girls' High School.	San Francisco.	
State Normal School of California.	San José.	[1]

## COLORADO.

## STATE LIBRARIES.

Colorado State Library.	Denver.	[iii]	D
Colorado Supreme Court Law Library.	Denver.		

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Colorado State Historical Society.	Denver.	
Colorado Scientific Society.	Denver.	[i]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Colorado (1875-77),	Boulder.	[i]	D
State Agricultural College of Colorado (1879),	Fort Collins.	[i]	X
Agricultural Experiment Station (State Agricultural College).	Fort Collins.		
State School of Mines (1874).	Golden.	[i]	X

## COLLEGES AND UNIVERSITIES.

Colorado College.	Colorado Springs.	[i]	D
University of Denver.	Denver.	[ii]	X

## CONNECTICUT.

## STATE LIBRARIES.

<i>State Library of Connecticut.</i>	Hartford.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Connecticut Historical Society</i> (1825).	Hartford.	[iii]
Connecticut Academy of Arts and Sciences. (1799.) (Yale University.)		
New Haven. (No library.)		

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>Yale University</i> (1700).	New Haven.	[iii]	D
Divinity School of Yale University.	New Haven.		
Law School of Yale University.	New Haven.		
Medical Department of Yale University.	New Haven.		
Sheffield Scientific School of Yale University (1817 and 1861).	New Haven.	[ii]	X
Connecticut Agricultural Experiment Station.	New Haven.	[i]	
Storrs Agricultural School (1881).	Manfield.	[i]	
Storrs School, Agricultural Experiment Station.	Storrs.	[i]	

## COLLEGES AND UNIVERSITIES.

<i>Trinity College.</i>	Hartford.	[iii]	
<i>Wesleyan University.</i>	Middletown.	[iii]	X

## STATE NORMAL SCHOOLS.

Cedar Street Training School.	New Haven.	
Connecticut State Normal School	New Britain.	[iii]
Welch Training School.	New Haven.	

## DELAWARE.

*Delaware State Library.* Dover. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Historical Society of Delaware (1884). Wilmington. [i]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Delaware College (1834). Newark. [iii] X  
 Agricultural Experiment Station (Delaware College). Newark. [i]

## DISTRICT OF COLUMBIA.

## NATIONAL LIBRARY.

*Congressional Library* (1800). Washington.

## NATIONAL HISTORICAL AND SCIENTIFIC SOCIETIES.

*Smithsonian Institution.* Washington.  
 American Historical Society. Washington.  
 National Academy of Sciences. Washington.

## COLLEGES AND UNIVERSITIES.

Catholic University of America. Washington.  
 Columbian University. Washington.  
*Georgetown University* (Georgetown P. O.). Washington.  
*Howard University.* Washington.

## NORMAL SCHOOLS.

Miner Normal School. Washington.  
 Washington Normal School. Washington.

## FLORIDA.

## STATE LIBRARIES.

*Florida State Library.* Tallahassee. D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Historical Society of Florida. Saint Augustine.

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Florida State Agricultural and Mechanical College (1884). Lake City.  
 Agricultural Experiment Station (State Agricultural and Mechanical College). Lake City.

## COLLEGES AND UNIVERSITIES.

Rollins' College. Winter Park.

## NORMAL SCHOOL.

Florida State Normal College. De Funiak Springs.  
 Florida State Normal School. Tallahassee.

## GEORGIA.

## STATE LIBRARIES.

*Georgia State Library.* Atlanta. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

*Georgia Historical Society* (1839). Savannah. [iii] D

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Georgia</i> ([1784], 1801).	Athens.	[ii]	D
Medical Department (University of Georgia).	Augusta.		
Atlanta University (colored) (1869).	Atlanta.		
Georgia State College of Agricultural and Mechanic Arts (the University of Georgia) (1872).	Athens.		
Georgia Agricultural Experiment Station. (State College of Agriculture and Mechanic Arts).	Athens.		
Middle Georgia Military and Agricultural College (1880.)	Milledgeville.		X
North Georgia Agricultural College (1873.)	Dahlonega.	[i]	D
South Georgia Agricultural College.	Thomasville.		X
Southwest Georgia Agricultural College (1879).	Cuthbert.		
West Georgia Agricultural and Mechanical College (1882).	Hamilton.		

## COLLEGES AND UNIVERSITIES.

Bowdon College.	Bowdon.	[i]	
Clark University.	Atlanta.		
Emory College.	Oxford.	[iii]	X
<i>Mercer University.</i>	Macon.	[iii]	X
Pio Nono College.	Macon.		

## IDAHO.

## STATE LIBRARIES.

Idaho State Library.	Boisé City.		D
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## ILLINOIS.

## STATE LIBRARIES.

<i>Illinois State Library.</i>	Springfield.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Illinois State Historical Society and Natural History Museum.	Springfield.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Illinois</i> (1868).	Urbana.	[iii]	D
State Laboratory of Natural History (University of Illinois).	Normal.		
College of Agriculture of the University of Illinois (1867).	Champaign.		
Agricultural Experiment Station of the University of Illinois.	Champaign.		

## COLLEGES AND UNIVERSITIES.

Augustana College.	Rock Island.	[i]	X
Carthage College.	Carthage.	[i]	
Chaddock College.	Quincy.		
Eureka College.	Eureka.	[ii]	
Ewing College. (Ewing College P. O.)	Ewing.	[i]	X
Hedding College.	Abingdon.	[i]	
German-English College.	Galena.		
Illinois College.	Jaeksonville.	[iii]	X
Illinois Wesleyan University.	Bloomington.	[iii]	D
Knox College.	Galesburgh.	[iii]	
Lake Forest University.	Lake Forest.	[i]	X
Lincoln University.	Lincoln.	[i]	

Lombard University	Galesburgh.	[ii]	
McKendree College.	Lebanon.	[iii]	
Monmouth College.	Monmouth.	[i]	D
Northwestern College.	Naperville.		
<i>Northwestern University.</i>	Evanston.	[iii]	D
Shurtleff College.	Upper Alton.	[i]	
Saint Francis Solanus College.	Quincy.		
<i>Saint Ignatius College.</i>	Chicago.	[i]	
Saint Joseph's Diocesan College.	Teutopolis.		
Saint Viator's College.	Bourbonnais Grove.	[i]	
Westfield College.	Westfield.	[ii]	X
Wheaton College.	Wheaton.	[iii]	

## STATE NORMAL SCHOOLS.

Cook County Normal School. (Englewood P. O.)	Chicago.	[i]	D
Illinois State Normal University.	Normal.	[i]	D
Southern Illinois Normal University.	Carbondale.	[ii]	D

## INDIANA.

## STATE LIBRARIES.

<i>Indiana State Library.</i>	Indianapolis.	[iii]	D
<i>Indiana State Law Library.</i>	Indianapolis.		

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Indiana Historical Society (1832).	Indianapolis.		
State Academy of Science (1885). (Unlocalized.)			

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Indiana University (1820-'26).	Bloomington.	[iii]	D
Department of Geology and Natural History (Indiana State University).	Indianapolis.	[i]	
Purdue University (1874).	La Fayette.	[iii]	
School of Agriculture, Horticulture, and Veterinary Science (Purdue University).	La Fayette.		
Agricultural Experiment Station of Indiana (Purdue University).	La Fayette.		

## COLLEGES AND UNIVERSITIES.

Butler University. (Irvington P. O.)	Indianapolis.	[iii]	D
Concordia College.	Fort Wayne.	[ii]	X
<i>De Pauw University.</i>	Greencastle.	[iii]	D
Theological School (De Pauw University).	Greencastle.		
Earlham College.	Richmond.	[i]	X
Franklin College.	Franklin.	[i]	D
Hanover College.	Hanover.	[iii]	
Hartsville.	Hartsville.	[i]	
Moore's Hill College.	Moore's Hill.	[ii]	X
Ridgeville College.	Ridgeville.	[i]	
Rose Polytechnic Institute.	Terre Haute.	[iii]	
Saint Meinrad's College and Abbey.	Saint Meinrad.	[ii]	X
Union Christian College.	Merom.	[ii]	
<i>University of Notre Dame du Lac.</i>	Notre Dame.	[iii]	D
<i>Wabash College.</i>	Crawfordsville.	[iii]	D

## STATE NORMAL SCHOOLS.

Indiana Normal College.	Covington.		
Indianapolis Normal School.	Indianapolis.		
Indiana State Normal School.	Terre Haute.	[ii]	X



## INDIAN TERRITORY,

## STATE LIBRARIES.

Cherokee National Council Library. Tahlequah.

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Cherokee National Female Seminary. Tahlequah. [i]  
Cherokee National Male Seminary. Tahlequah. [i]

## IOWA.

## STATE LIBRARIES.

*Iowa State Library.* Des Moines. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

*State Historical Society of Iowa.* Iowa City. [iii]  
*Iowa Academy of Sciences (1875).* Iowa City.

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

State University of Iowa (1847-'60). Iowa City. [iii] D  
Law Department (State University of Iowa). Iowa City.  
Iowa State College of Agriculture and Meehanic Arts (1858). Ames. [ii]  
Iowa Agricultural Experiment Station. Ames.

## COLLEGES AND UNIVERSITIES.

Amity College. College Springs. [i] X  
Central University of Iowa. Pella.  
Cornell College. Mount Vernon. [iii] X  
Drake University. Des Moines. [i] X  
German College. Monnt Pleasant.  
Griswold College. Davenport. [iii]  
Iowa College. Grinnell. [iii] D  
Iowa Wesleyan University. Monnt Pleasant. [iii] D  
Lenox College. Hopkinton.  
Norwegian Luther College. Decorah. [i] X  
Oskaloosa College. Oskaloosa. [iii]  
Parsons College. Fairfield. [i] X  
Penn College. Oskaloosa. [i] X  
Simpson College. Indianola. [ii] X  
Saint Joseph's College. Dubuque.  
Tabor College. Tabor. [i]  
University of Des Moines. Des Moines.  
Upper Iowa University. Fayette. [iii] D  
Western College. Toledo.

## STATE NORMAL SCHOOLS.

Iowa State Normal School. Cedar Falls. [i]  
West Des Moines Training School. Des Moines.

## KANSAS.

## STATE LIBRARIES.

*Kansas State Library.* Topeka. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

*Kansas State Historical Society.* Topeka. [ii] D  
*Kansas Academy of Sciences (1868).* Topeka. [ii]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Kansas</i> (1861-'66).	Lawrence.	[iii]	D
Kansas State Agricultural College (1863).	Manhattan.	[iii]	D
Kansas Agricultural Experiment Station. Manhattan.			

## COLLEGES AND UNIVERSITIES.

Baker University.	Baldwin City.	[i]	
College of Emporia.	Emporia.		
Highland University.	Highland.		
Kansas Wesleyan University.	Salina.	[i]	X
Lane University.	Lecompton.		
Ottawa University.	Ottawa.	[i]	
Saint Benedict's College.	Atchison.	[i]	
Saint Mary's College.	Saint Mary's.		X
Washburn College.	Topeka.	[ii]	

## STATE NORMAL SCHOOLS.

Kansas State Normal School.	Emporia.	[i]	X
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## KENTUCKY.

## STATE LIBRARIES.

<i>Kentucky State Library.</i>	Frankfort.	[i]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Kentucky Historical Society.	Frankfort.		
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>Kentucky University.</i>	Lexington.	[iii]	D
Agricultural and Mechanical College of Kentucky (1865).	Lexington.	[i]	
Kentucky Agricultural Experiment Station (Agricultural and Mechanical College). Lexington.			

## COLLEGES AND UNIVERSITIES.

Berea College.	Berea.		X
Bethel College.	Russellville.	[iii]	X
Central University.	Richmond.	[ii]	X
Centre College.	Danville.	[iii]	D
Eminence College.	Eminence.	[i]	
Georgetown College.	Georgetown.	[iii]	D
Kentucky Classical and Business College.	North Middletown.		
Kentucky Wesleyan College.	Millersburgh.		
Murray Male and Female Institute and Western Kentucky Normal School.	Murray.		
Ogden College.	Bowling Green.	[i]	D
Saint Mary's College.	Saint Mary's.		X
South Kentucky College.	Hopkinsville.		

## LOUISIANA.

## STATE LIBRARIES.

<i>State Library of Louisiana.</i>	New Orleans.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Louisiana State Historical Society.	Baton Rouge.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>Tulane University</i> (1847).	New Orleans.	[iii]	D
Fisk Library of Tulane University.	New Orleans.		
New Orleans Academy of Science (Tulane University).	New Orleans.		
Southern University (colored) (1880).	New Orleans.		
<i>Louisiana State University and Agricultural and Mechanical College</i> (1873).	Baton Rouge.	[iii]	D
North Louisiana Experiment Station (Agricultural and Mechanical College).	Calhoun.		
State Experiment Station (Agricultural and Mechanical College).	Baton Rouge.		
Sugar Experiment Station (Agricultural and Mechanical College).	Kenner.		

## COLLEGES AND UNIVERSITIES.

Jefferson College. (Saint Mary's.)	Convent.	[i]	X
Saint Charles College.	Grand Coteau.	[iii]	X
Centenary College of Louisiana.	Jackson.	[i]	X
Keachi College.	Keachi.		X
College of the Immaculate Conception.	New Orleans.		
New Orleans University.	New Orleans.		D
Straight University.	New Orleans.		
Thatcher Institute.	Shreveport.		

## STATE NORMAL SCHOOLS.

New Orleans Normal School.	New Orleans.		
Louisiana State Normal School.	Natchitoches.		D

## MAINE.

## STATE LIBRARIES.

<i>Maine State Library.</i>	Augusta.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Maine Historical Society</i> (1822).	Portland.	[iii]	D
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Maine State College of Agriculture and the Mechanic Arts (1865).	Orono.	[iii]	X
Maine State College Agricultural Experiment Station.	Orono.		

## COLLEGES AND UNIVERSITIES.

<i>Bowdoin College.</i>	Brunswick.	[iii]	D
Bates College.	Lewiston.	[i]	D
<i>Colby University.</i>	Waterville.	[iii]	D

## STATE NORMAL SCHOOLS.

Eastern State Normal School.	Castine.		
Madawaska Training School.	Grand Isle and Fort Kent.		
Normal Training and Practice Class.	Portland.		
State Normal and Training School.	Farmington.		
State Normal School.	Gorham.		

## MARYLAND.

## STATE LIBRARIES.

<i>Maryland State Library.</i>	Annapolis.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Maryland Historical Society.</i>	Baltimore.	[iii]	D
Maryland Academy of Sciences (1822).	Baltimore.	[ii]	

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Maryland Agricultural College ([ 1856 ], 1859). Agricultural College P. O.	[iii]	
Maryland Agricultural Experiment Station (Agricultural College).		
Agricultural College P. O.		

## COLLEGES AND UNIVERSITIES.

Baltimore City College.	Baltimore.		
<i>Johns Hopkins University.</i>	Baltimore.	[iii]	D
Mount Saint Mary's College.	Emmitsburg.	[iii]	
New Windsor College and Windsor Female College.	New Windsor.		
Rock Hill College.	Ellicott City.	[i]	X
Saint Charles College.	Ellicott City.		
Saint John's College.	Annapolis.	[iii]	D
Washington College.	Chestertown.	[iii]	X
Western Maryland College.	Westminster.	[ii]	D

## STATE NORMAL SCHOOLS.

Maryland State Normal School.	Baltimore.	[ii]	
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## MASSACHUSETTS.

## STATE LIBRARIES.

<i>Massachusetts State Library.</i>	Boston.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Massachusetts Historical Society.</i>	Boston.	[iii]	D
<i>American Academy of Arts and Sciences (1780).</i>	Boston.	[iii]	

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>Harvard University (1636).</i>	Cambridge.	[iii]	D
Astronomical Observatory, Philips Library.	Cambridge.		
Botanic Garden and Herbarium (Harvard University).	Cambridge.	[i]	
Bussey Institution, Agricultural and Horticultural.	Jamaica Plains.	[ii]	
Harvard <i>Divinity School.</i>	Cambridge.		
Harvard Medical School (Harvard University).	Boston.		
Episcopal Theological School of Harvard University.	Cambridge.	[i]	
Lawrence Scientific School of Harvard University	Cambridge.	[i]	
<i>Law School, Harvard (Harvard University).</i>	Cambridge.		
<i>Museum of Comparative Zoology, Harvard (Harvard University).</i>	Cambridge.	[iii]	
Natural History Society, Harvard (Harvard University).	Cambridge.		
Peabody Museum of American Archaeology and Ethnology.	Cambridge.	[iii]	
Massachusetts Institute of Technology (1863-'65).	Boston.	[iii]	
Massachusetts Agricultural College (1856).	Amherst.	[ii]	
Massachusetts State Agricultural Experiment Station.	Amherst.		
Hatch Experiment Station.	Amherst.		

## COLLEGES AND UNIVERSITIES.

<i>Amherst College.</i>	Amherst.	[iii]	D
Lawrence Observatory.	Amherst	[i].	
<i>Boston College.</i>	Boston.	[ii]	X
<i>Boston University.</i>	Boston.	[ii]	
Clark University.	Worcester.	[iii]	
Smith College.	Northampton.	[ii]	X
<i>Tuff's College.</i>	College Hill.	[iii]	X
<i>Wellesley College.</i>	Wellesley.	[iii]	

<i>Williams College.</i>	Williamstown.	[iii]	D
Observatory (Williams College).	Williamstown.		
Lyceum of Natural History (Williams College).	Williamstown.		
Museum of Williams College.	Williamstown.		
<i>College of the Holy Cross.</i>	Worcester.	[iii]	

## STATE NORMAL SCHOOLS.

Boston Normal School.	Boston.		
Fall River Training School.	Fall River.		
Haverhill Training School.	Haverhill.		
Lawrence Training School.	Lawrence.		
Massachusetts Normal Art School.	Boston.		
Massachusetts State Normal School.	Worcester.	[i]	
State Normal School.	Bridgewater.	[ii]	
State Normal School.	Framingham.		
State Normal School.	Salem.		
Westfield State Normal School.	Westfield.		

## MICHIGAN.

## STATE LIBRARIES.

<i>Michigan State Library.</i>	Lansing.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Historical Society of Michigan.	Detroit.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Michigan.</i>	Ann Arbor.	[iii]	D
Dental Department (University of Michigan).	Ann Arbor.		
Law Department (University of Michigan).	Ann Arbor.		
Medical Department (University of Michigan).	Ann Arbor.		
Observatory (University of Michigan).	Ann Arbor.		
Michigan Agricultural College.	Agricultural College.	[iii]	
Experiment Station of Michigan Agricultural College.	Agricultural College.		

## COLLEGES AND UNIVERSITIES.

Adrian College.	Adrian.	[iii]	
Albion College.	Albion.	[iii]	X
Battle Creek College.	Battle Creek.	[i]	
Grand Traverse College.	Benzonia.		
Hillsdale College.	Hillsdale.	[iii]	X
<i>Hope College.</i>	Holland.		X
Kalamazoo College.	Kalamazoo.	[iii]	
<i>Olivet College.</i>	Olivet.	[ii]	

## STATE NORMAL SCHOOLS.

Training School for Teachers.	Adrian.		
State Normal School.	Ypsilanti.	[i]	X

## MINNESOTA.

## STATE LIBRARIES.

<i>Minnesota State Library.</i>	St. Paul.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Minnesota Historical Society.</i>	St. Paul.	[iii]	D
Minnesota Academy of Natural Science (1873).	Minneapolis.	[i]	

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Minnesota.</i>	Minneapolis.	[iii]	D
College of Agriculture of the University of Minnesota (1868). (St. Anthony Park P. O.)	Minneapolis.		
State School of Agriculture of the University of Minnesota. (St. Anthony Park P. O.)	Minneapolis.		
Agricultural Experiment Station of the University of Minnesota.	St. Anthony Park.		

## COLLEGES AND UNIVERSITIES.

Angsburg Seminary.	Minneapolis.		
Carleton College.	Northfield.	[ii]	X
Hamline University.	Hamline.	[i]	X
Saint John's University.	Collegeville.		

## STATE NORMAL SCHOOLS.

State Normal School.	Mankato.	[i]	D
State Normal School.	Moorhead.		
State Normal School.	Saint Cloud.	[ii]	D
State Normal School.	Winona.	[i]	D

## MISSISSIPPI.

## STATE LIBRARIES.

<i>Mississippi State Library.</i> (Smithsonian publications transferred to the Agricultural and Mechanical College.)	Jackson.		D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Mississippi Historical Society.	Jackson.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Mississippi</i> (1874). (University P. O.)	Oxford.	[iii]	D
Agricultural and Mechanical College of Mississippi (1880). (Agricultural College P. O.)	Starkville.	[iii]	D
Mississippi Agricultural Experiment Station. (Agricultural College P. O.)	Starkville.	[i]	
Alcorn Agricultural and Mechanical College (colored).	Rodney.	[i]	

## COLLEGES AND UNIVERSITIES.

Kavanaugh College.	Holmesville.		
Mississippi College.	Clinton.	[i]	D
Rust University.	Holly Springs.		

## STATE NORMAL SCHOOLS.

State Normal School.	Holly Springs.		D
Tougaloo University.	Tougaloo.		

## MISSOURI.

## STATE LIBRARIES.

<i>Missouri State Library.</i>	Jefferson City.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Missouri Historical Society.	St. Louis.	[i]	D
<i>Saint Louis Academy of Sciences</i> (1857).	St. Louis.	[iii]	

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Missouri.</i>	Columbia.	[iii]	D
Law Library of University of Missouri.	Columbia.		
Missouri School of Mines and Metallurgy (1870). (University of Missouri).	Rolla.	[i]	X
Agricultural and Mechanical College of the University of Missouri (1870).	Columbia.		
Missouri Agricultural Experiment Station of the University of Missouri.	Columbia.		

## COLLEGES AND UNIVERSITIES.

Central College.	Fayette.	[ii]	
Central Wesleyan College.	Warrenton.	[i]	
Christian University.	Canton.		
College of the Christian Brothers.	St. Louis.		D
<i>Drury College.</i>	Springfield.	[iii]	D
Grand River College.	Edinburgh.	[i]	
La Grange College.	La Grange.	[i]	
Lewis College.	Glasgow.		
Morrisville College.	Morrisville.		
Pritchett School Institute.	Glasgow.	[i]	
<i>Saint Louis University.</i>	St. Louis.	[iii]	D
<i>Saint Vincent's College.</i>	Cape Girardeau.		D
Southwest Baptist College.	Bolivar.		
Washington University.	St. Louis.	[iii]	
Westminster College.	Fulton.		D
William Jewell College.	Liberty.	[ii]	

## STATE NORMAL SCHOOLS.

Missouri State Normal School (1st District).	Kirksville.	[iii]	D
Missouri State Normal School (2d District).	Warrensburg.	[ii]	
Missouri State Normal School (3d District).	Cape Girardeau.		X
Saint Louis Normal School.	St. Louis.		

## MONTANA.

## STATE LIBRARIES.

<i>Montana State Library.</i>	Helena.	[i]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Historical Society of Montana.	Helena.	[ii]	D
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## COLLEGES AND UNIVERSITIES.

College of Montana (1883).	Deer Lodge.		X
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## NEBRASKA.

## STATE LIBRARIES.

<i>Nebraska State Library</i> (1851).	Lincoln.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

State Historical Society of Nebraska (1878).	Lincoln.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Nebraska (1869).	Lincoln.	[i]	D
Industrial College of the University of Nebraska (1869).	Lincoln.		
Agricultural Experiment Station (University of Nebraska, Lincoln).			

## COLLEGES AND UNIVERSITIES.

Creighton College.	Omaha.	[i]	X
Doane College.	Crete.	[ii]	X
Gates College.	Neligh.	[i]	X
Methodist Episcopal College of Nebraska.	York.		
Nebraska Central College.	Central City.		

## STATE NORMAL SCHOOLS.

Nebraska State Normal School.	Peru.	[ii]	X
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## NEVADA.

## STATE LIBRARIES.

<i>State Library of Nevada.</i>	Carson City.	[i]	D
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

State University of Nevada.	Reno.	[i]	D
School of Agriculture of the Nevada State University (1887).	Reno.		
Nevada State Agricultural Experiment Station (University of Nebraska).	Reno.		

## NEW HAMPSHIRE.

## STATE LIBRARIES.

<i>New Hampshire State Library.</i>	Concord.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>New Hampshire Historical Society</i> (1823).	Concord.	[iii]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>Dartmouth College.</i>	Hanover.	[iii]	D
Chandler Scientific Department of Dartmouth College.	Hanover.		
Thayer School of Civil Engineering of Dartmouth College.	Hanover.		
Shattuck Observatory (Dartmouth College).	Hanover.		
New Hampshire College of Agriculture and the Mechanic Arts.	Hanover.	[ii]	
New Hampshire Agricultural Experiment Station.	Hanover.		

## STATE NORMAL SCHOOLS.

City Training School.	Manchester.		
New Hampshire State Normal School.	Plymouth.		

## NEW JERSEY.

## STATE LIBRARIES.

<i>State Library of New Jersey.</i>	Trenton.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

New Jersey Historical Society (1845).	Newark.	[iii]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>College of New Jersey</i> (1746).	Princeton.	[iii]	D
Green, J. C., School of Science (College of New Jersey).	Princeton.	[i]	
Halstead Observatory (College of New Jersey).	Princeton.	[i]	
Museum, E. M., of Geology and Archaeology of the College of New Jersey.	Princeton.	[ii]	
<i>Theological Seminary of the Presbyterian Church.</i>	Princeton.	[iii]	
Rutgers Scientific School of Rutgers College.	New Brunswick.	[i]	
New Jersey Agricultural College Experiment Station (Rutgers College).	New Brunswick.		
New Jersey State Agricultural Experiment Station (Rutgers College).	New Brunswick.		

## COLLEGES AND UNIVERSITIES.

<i>Rutgers College.</i>	New Brunswick.	[iii]	D
College of the Sacred Heart.	Vineland.		
Saint Benedict's College.	Newark.		

## STATE NORMAL SCHOOLS.

New Jersey State Normal School.	Trenton.	[ii]	
Newark Normal School.	Newark.		
Patterson Normal Training School.	Patterson.		

## NEW MEXICO.

## STATE LIBRARIES.

Territorial Library of New Mexico.	Santa Fé.	[i]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Historical Society of New Mexico. Santa Fe. [i]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of New Mexico (1881). Santa Fé. [ii]  
 Agricultural College of New Mexico. Las Cruces.

## NEW YORK.

## STATE LIBRARIES.

*New York State Library.* Albany. [iii] D  
 New York State Law Library (New York State Library). Albany. D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

*New York Historical Society* (1804). New York. [iii] D  
 New York Academy of Science (1817). New York. [iii]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

*Cornell University.* Ithaca. [iii] D  
 Cornell University Agricultural Experiment Station. Ithaca.  
 College of Agriculture of Cornell University (1888). Ithaca.  
 New York Agricultural Experiment Station. Geneva. [1]

## COLLEGES AND UNIVERSITIES.

Alfred University. Alfred Centre. [ii]  
 Observatory, Alfred University. Alfred Centre.  
 Brooklyn Collegiate and Polytechnic Institute. Brooklyn. X  
*Canisius College.* Buffalo. [ii]  
*College of St. Francis Xavier.* New York. [iii]  
*College of the City of New York.* New York. [iii] D  
*Columbia College.* New York. [iii] D  
 Observatory, Columbia College. New York.  
 School of Mines, Columbia College. New York. [ii]  
*Hamilton College.* Clinton. [iii] X  
 Litchfield Observatory, Hamilton College. Clinton.  
*Hobart College.* Geneva. [iii] X  
*Madison University.* Hamilton. [iii]  
*Manhattan College.* New York. [i]  
 Niagara University. (Niagara University P. O.) Suspension Bridge. [i]  
 Saint Bonaventure's College and Seminary. Allegany. [i]  
 Saint Francis College. Brooklyn.  
*Saint John's College* (formerly Fordham). Tremont. [iii] D  
 Saint Lawrence University. Canton. [ii] D  
 Saint Stephen's College. Amundale. [ii]  
*Syracuse University.* Syracuse. [iii] D  
*Union College.* Schenectady. [iii] D  
*University of Rochester.* Rochester. [iii] D  
*University of the City of New York.* New York. [iii]  
 Scientific Department (of the University of the City of New York).  
 New York.  
 Vassar College. Poughkeepsie. [iii] X  
 Wells College. Aurora. [i]

## STATE NORMAL SCHOOLS.

Brooklyn Training School. Brooklyn.  
 Female Normal School. New York.  
 State Normal School. Albany. [iii] X  
 State Normal and Training School. Broekport. [i] X  
 State Normal and Training School. Buffalo.

State Normal and Training School.	Cortland.	[ii]	
State Normal and Training School.	Fredonia.	[i]	
State Normal and Training School.	Geneseo.		
State Normal and Training School.	New Paltz.	[i]	
State Normal and Training School.	Oswego.	[i]	X
State Normal and Training School.	Potsdam.		X
Syracuse Training School.	Syracuse.		
Teachers' Normal Training Class.	Rochester.		
Teachers' Training Class of Albany.	Albany.		

## NORTH CAROLINA.

## STATE LIBRARIES.

<i>North Carolina State Library.</i>	Raleigh.	[iii]	D
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of North Carolina.	Chapel Hill.	[iii]	D
Elisha Mitchell Science Society (University of North Carolina).	Chapel Hill.	[i]	X
Law Department of the University of North Carolina.	Chapel Hill.		
Medical School of the University of North Carolina.	Chapel Hill.		
College of Agricultural and Mechanic Arts of North Carolina.	Chapel Hill.		
North Carolina Agricultural Experiment Station.	Raleigh.	[i]	

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Biddle University.	Charlotte.		
Davidson College.	Davidson College.	[iii]	
North Carolina College.	Mt. Pleasant.		
Rutherford College.	Rutherford.		
Shaw University.	Raleigh.		
Trinity College.	Trinity College.	[iii]	
Wake Forest College.	Wake Forest.	[ii]	X
Weaverville College.	Weaverville.		

## STATE NORMAL SCHOOLS.

New Berne State Normal School.	New Berne.		
Plymouth State Colored Normal School.	Plymouth.		
State Colored Normal School.	Fayetteville.		
State Colored Normal School.	Salisbury.		

## NORTH DAKOTA.

## STATE LIBRARIES.

North Dakota State Library.	Bismarek.	[i]	D
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of North Dakota (1883-'84).	Grand Forks.		D
North Dakota Agricultural College (1890).	Fargo.		

## OHIO.

## STATE LIBRARIES.

<i>Ohio State Library.</i>	Columbus.	[iii]	D
<i>Ohio State Law Library.</i>	Columbus.		

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Historical and Philosophical Society of Ohio.	Cincinnati.	[iii]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

Ohio State University (1873).	Columbus.	[ii]	
Ohio Agricultural Experiment Station (Ohio State University).	Columbus.		

## COLLEGES AND UNIVERSITIES.

<i>Adelbert College of Western Reserve University.</i>	Cleveland.		X
Antioch College.	Yellow Springs.	[iii]	
Ashland College.	Ashland.	[i]	
Baldwin University	Berea.		
Belmont College.	College Hill.	[iii]	X
Buehtel College.	Akron.	[i]	D
Observatory (Buehtel College).	Akron.		
Calvin College. (Brooklyn Village P. O.)	Cleveland.		
Capital University.	Columbus.		
<i>Denison University.</i>	Granville.	[ii]	D
German Wallace College.	Berea.		
Heidelberg College.	Tiffin.	[iii]	X
Hiram College.	Hiram.	[ii]	D
<i>Kenyon College.</i>	Gambier.	[iii]	D
<i>Marietta College.</i>	Marietta.	[iii]	D
Miami University.	Oxford.	[iii]	D
Mount Union College. (Mount Union P. O.)	Alliance.	[ii]	D
Muskingum College.	New Concord.	[i]	
<i>Oberlin College.</i>	Oberlin.	[iii]	D
Ohio University.	Athens.	[iii]	D
Normal Department of the Ohio University.	Athens.		
<i>Ohio Wesleyan University.</i>	Delaware.	[iii]	D
Otterbein University.	Westerville.	[iii]	
Rio Grande College.	Rio Grande.		
Sciio College.	Sciio.	[i]	
Saint Joseph's College.	Cincinnati.		
<i>Saint Xavier's College.</i>	Cincinnati.		
Twin Valley College.	Germantown.	[i]	
University of Cincinnati.	Cincinnati.	[iii]	X
<i>University of Wooster.</i>	Wooster.	[iii]	X
Urbana University.	Urbana.	[ii]	
Wilberforce University.	Wilberforce.	[x]	X
Wilmington College.	Wilmington.	[i]	
<i>Wittenberg College.</i>	Springfield.	[iii]	

## STATE NORMAL SCHOOLS.

Cincinnati Normal School.	Cincinnati.
Cleveland Normal School.	Cleveland.
Dayton Normal School.	Dayton.
Geneva Normal School.	Geneva.

## OREGON.

## STATE LIBRARIES.

<i>Oregon State Library.</i>	Salem.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Oregon Pioneer and Historical Society.	Astoria.
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Oregon.	Engene City.	[iii]	D
Oregon State Agricultural College (1888).	Corvallis.		D
Oregon Experiment Station. (Oregon State Agricultural College.)	Corvallis.		

## COLLEGES AND UNIVERSITIES.

Christian College.	Monmouth.
Corvallis College.	Corvallis.

McMinnville College.	McMinnville.		X
Tualatin Academy and Pacific University.	Forest Grove.	[iii]	X
Philomath College.	Philomath.	[i]	
Willamette University.	Salem.		

## STATE NORMAL SCHOOLS.

Ashland College and Normal School.	Ashland.		
Oregon State Normal School.	Monmouth.		
State Normal School.	Drain.		X

## PENNSYLVANIA.

## STATE LIBRARIES.

<i>Pennsylvania State Library.</i>	Harrisburg.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Historical Society of Pennsylvania (1824).</i>	Philadelphia.	[iii]	D
<i>Academy of Natural Sciences.</i>	Philadelphia.	[iii]	

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of Pennsylvania (1751).</i>	Philadelphia.	[iii]	D
Stillé Medical Library.	Philadelphia.		
Pennsylvania State College.	State College.	[ii]	D
Pennsylvania State College Agricultural Experiment Station (Pennsylvania State College).	State College.		

## COLLEGES AND UNIVERSITIES.

<i>Allegheny College.</i>	Meadville.	[iii]	D
Observatory of Allegheny College.	Allegheny.		
Bryn Mawr College.	Bryn Mawr.		
<i>Rucknell University.</i>	Lewisburg.	[iii]	
Catholic College of the Holy Ghost.	Pittsburg.	[i]	
Dickinson College.	Carlisle.	[iii]	
Franklin and Marshall College.	Lancaster.	[iii]	X
Geneva College.	Beaver Falls.	[i]	X
Grove City College.	Grove City.		
<i>Haverford College.</i>	Haverford.	[iii]	
Observatory, Haverford College.	Haverford.		
<i>Lafayette College.</i>	Easton.	[iii]	X
Pardee Scientific Department. (Lafayette College.)	Easton.		
La Salle College.	Philadelphia.	[i]	
Lebanon Valley College.	Annville.	[i]	
<i>Lehigh University.</i>	South Bethlehem.	[iii]	D
Sayer Observatory. (Lehigh University.)	South Bethlehem.		
Lincoln University. (Lincoln University P. O.)	Oxford.	[iii]	
Muhlenberg College.	Allentown.		X
Pennsylvania College.	Gettysburg.	[iii]	D
Pennsylvania Military Academy.	Chester.		
<i>Saint Vincent's Abbey and College.</i>	Beatty.	[i]	
<i>Swarthmore College.</i>	Swarthmore.	[iii]	
Theil College.	Greenville.	[i]	
Ursinus College. (Collegeville P. O.)	Freeland.	[i]	
Villanova College.	Villanova.		
Washington and Jefferson College.	Washington.	[iii]	
Westminster College.	New Wilmington.	[iii]	
Western University of Pennsylvania.	Allegheny.	[ii]	

## STATE NORMAL SCHOOLS.

Cumberland Valley State Normal School.	Shippensburg.		
Central State Normal School.	Lock Haven.	[i]	D

Keystone State Normal School.	Kutztown.	[i]	D
Pennsylvania State Normal School of the Fifth District.	Maustfield.	[ii]	D
Pennsylvania State Normal School of the Second District.	Millersville.	[i]	
Pennsylvania State Normal School of the Sixth District.	Bloomsburg.		
Philadelphia Normal School for Girls.	Philadelphia.		
Southwestern State Normal School.	California.	[i]	
State Normal School of Clarion.	Clarion.	[i]	
State Normal School, Edinborough.	Edinborough.	[i]	
State Normal School.	Indiana.		
Teachers' Training School.	Erie.		
Teachers' Training School.	Reading.		
West Chester State Normal School.	West Chester.	[iii]	

## RHODE ISLAND.

## STATE LIBRARIES.

<i>Rhode Island State Library.</i>	Providence.		D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

<i>Rhode Island Historical Society.</i>	Providence.	[iii]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>Brown University</i> (1764).	Providence.	[iii]	D
Agricultural and Scientific Department of Brown University.	Providence.		
Rhode Island State Agricultural School (1888).	Kingston.		
Rhode Island State Agricultural Experiment Station.	Kingston.		

## STATE NORMAL SCHOOLS.

Rhode Island State Normal School.	Providence.	[ii]	
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## SOUTH CAROLINA.

## STATE LIBRARIES.

<i>South Carolina State Library.</i>	Columbia.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

South Carolina Historical Society.	Charleston.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

<i>University of South Carolina</i> (1801).	Columbia.		D
College of Agriculture and Mechanic Arts of the University of South Carolina (1879).	Columbia.	[iii]	
South Carolina Agricultural Experiment Station (University of South Carolina).	Columbia.		
Clatlin University and South Carolina Agricultural College and Mechanics' Institute (1872).	Orangeburg.	[i]	

## COLLEGES AND UNIVERSITIES.

Adger College.	Walhalla.		
Allen University.	Columbia.		
<i>College of Charleston.</i>	Charleston.	[iii]	D
Erskine College.	Due West.	[ii]	
Astronomical Observatory of Erskine College.	Due West.		
Furman University.	Greenville.	[iii]	
Newberry College.	Newberry.	[i]	X
<i>South Carolina College.</i>	Columbia.		
Wofford College.	Spartanburg.		D

## STATE NORMAL SCHOOLS.

Winthrop Training School for Teachers.	Columbia.		
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## SOUTH DAKOTA.

## STATE LIBRARIES.

South Dakota State Library.	Pierre.		D
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of South Dakota (1883).	Vermillion.	[ii]	D
South Dakota Agricultural College (1889).	Brookings.	[i]	D
South Dakota Agricultural Experiment Station.	Brookings.		
South Dakota School of Mines (1886).	Rapid City.		

## COLLEGES AND UNIVERSITIES.

Pierre University. (East Pierre P. O.)	Pierre.	[ii]	D
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## STATE NORMAL SCHOOLS.

South Dakota Normal School.	Madison.		
State Normal School.	Spearfish.		D

## TENNESSEE.

## STATE LIBRARIES.

<i>Tennessee State Library.</i>	Nashville.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Tennessee Historical Society,	Nashville.	[i]	
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Tennessee (1806).	Knoxville.	[iii]	D
Nashville Medical College (University of Tennessee).	Nashville.	[i]	
State Agricultural and Mechanical College of the University of Tennessee (1869).	Knoxville.		
Tennessee Agricultural Experiment Station (University of Tennessee).	Knoxville.		

## COLLEGES AND UNIVERSITIES.

Bethel College.	McKenzie.		X
Carson College.	Mossy Creek.		
Central Tennessee College.	Nashville.	[i]	
Chattanooga University.	Chattanooga.		
Christian Brothers' College.	Memphis.	[ii]	X
<i>Cumberland University.</i>	Lebanon.	[iii]	D
Fisk University.	Nashville.		
Grant Memorial University.	Athens.		
Greeneville and Tusculum College.	Tusculum.	[ii]	D
Hiwassee College.	Hiwassee.	[ii]	X
King College.	Bristol.		
Maryville College.	Maryville.	[iii]	
Milligan College.	Milligan.		X
Roger Williams University.	Nashville.		
Southwestern Baptist University.	Jackson.	[ii]	D
Southwestern Presbyterian University.	Clarksville.	[i]	X
<i>University of the South.</i>	Sewanee.	[iii]	D
<i>Vanderbilt University.</i>	Nashville.	[iii]	D
Observatory of Vanderbilt University.	Nashville.		

## STATE NORMAL SCHOOL.

State Normal College, University of Nashville.	Nashville.	[iii]	X
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## TEXAS.

## STATE LIBRARIES.

Texas State Library. Austin. [iii] D

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Texas. Austin. [iii] D

Agricultural and Mechanical College of Texas. College Station. [ii] D

Texas Agricultural Experiment Station. College Station.

## COLLEGES AND UNIVERSITIES.

Austin College. Sherman. [i]

Baylor University. Waco. D

Hope Institute. Italy.

Mansfield Male and Female College. Mansfield.

Salado College. Salado.

Southwestern University. Georgetown. [i] X

Trinity University. Tehuacana. [i] X

## STATE NORMAL SCHOOLS.

Prairie View Normal Institute. Hempstead.

Sam Houston Normal Institute. Huntsville. X

## UTAH TERRITORY.

## STATE LIBRARIES.

Utah Territorial Library. Salt Lake City. [iii] D

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Deseret (1850). Salt Lake City. [iii] X

Utah Agricultural College (1888). Logan City.

## VERMONT.

## STATE LIBRARIES.

*Vermont State Library.* Montpelier. [iii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Vermont Historical Society. Montpelier. [iii]

State Cabinet of Natural History (with State Library). Montpelier. [i]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

*University of Vermont and State Agricultural College.* Burlington. [iii] D

Vermont State Agricultural Experiment Station. Burlington.

## COLLEGES AND UNIVERSITIES.

*Middlebury College.* Middlebury. [iii] D

## STATE NORMAL SCHOOLS.

Johnson State Normal School. Johnson. [i]

Castleton State Normal School. Castleton. [iii]

Randolph State Normal School. Randolph. [i]

## VIRGINIA.

## STATE LIBRARIES.

*Virginia State Library.* Richmond. [iii] D

Virginia State Law Library. Richmond.

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

*Virginia Historical Society (1831).* Richmond. [iii] D

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

*University of Virginia (1819).* (University P. O.) Charlottesville. [iii] D

Leander McCormick Observatory (University of Virginia). University P. O.

Virginia Military Institute (University of Virginia). Lexington. [iii] D

Virginia Agricultural and Mechanical College (1872).	Blacksburg.	[ii]	
Virginia Agricultural Experiment Station.	Blacksburg.		
Hampton Normal and Agricultural Institute (1868).	Hampton.	[i]	

## COLLEGES AND UNIVERSITIES.

Emory and Henry College.	Emory.	[iii]	D
Hampten-Sidney College.	Hampten-Sidney.	[iii]	
<i>Randolph Macon College.</i>	Ashland.	[iii]	
Richmond College.	Richmond.	[iii]	X
<i>Roanoke College.</i>	Salem.	[iii]	D
<i>Washington and Lee University.</i>	Lexington.	[iii]	X
School of Civil Engineering and Mining (Washington and Lee University).	Lexington.		
William and Mary College.	Williamsburgh		

## STATE NORMAL SCHOOLS.

State Normal School of Virginia.	Farmville.		X
Virginia Normal and Collegiate Institute.	Petersburg.	[i]	D

## WASHINGTON.

## STATE LIBRARIES.

Washington State Library.	Olympia.	[iii]	D
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Washington (1862).	Seattle.	[ii]	
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## COLLEGES AND UNIVERSITIES.

Whitman College.	Walla Walla.	[ii]	
Washington College.	Tacoma.		

## WEST VIRGINIA.

## STATE LIBRARIES.

<i>West Virginia State Library.</i>	Charleston.	[iii]	D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

West Virginia Historical Society.	Morgantown.		
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## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

West Virginia University and Agricultural College.	Morgantown.	[iii]	D
West Virginia Experiment Station. (University of West Virginia.)	Morgantown.		

## COLLEGES AND UNIVERSITIES.

Bethany College.	Bethany.	[iii]	X
West Virginia College.	Flemington.	[ii]	

## STATE NORMAL SCHOOLS.

Fairmont State Normal School.	Fairmont.		D
Glenville State Normal School.	Glenville.		D
Marshall College State Normal School.	Huntington.	[i]	X
Shepherd College State Normal School.	Shepherdstown.	[ii]	X
Storer College.	Harper's Ferry.		
West Liberty State Normal School.	West Liberty.		

## WISCONSIN.

## STATE LIBRARIES.

<i>State Library of Wisconsin.</i>	Madison.		D
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## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

*State Historical Society of Wisconsin.* Madison. [iii] D

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

*University of Wisconsin.* Madison. [iii] X  
 Washburn Observatory of the University of Wisconsin. Madison.  
 Department of Agriculture of the University of Wisconsin (1866). Madison.  
 Agricultural Experiment Station of the University of Wisconsin. Madison.

## COLLEGES AND UNIVERSITIES

*Beloit College.* Beloit. [iii] D  
 Smith's Observatory, Beloit College. Beloit.  
*Galesville University.* Galesville. [1] D  
*Lawrence University.* Appleton. [iii] D  
*Milton College.* Milton. X  
*Northwestern University.* Watertown. [1]  
*Racine College.* Racine. [iii] D  
*Ripon College.* Ripon. [1] X  
*Seminary of Saint Francis of Sales.* (St. Francis P. O.) Milwaukee.

## STATE NORMAL SCHOOLS.

*Oshkosh State Normal School.* Oshkosh. [1]  
*River Falls State Normal School.* River Falls. [1] X  
*Whitewater State Normal School.* Whitewater. [1] X  
*Wisconsin State Normal School.* Platteville. [iii]  
*Wisconsin State Normal School.* Milwaukee.

## WYOMING.

## STATE LIBRARIES.

*Wyoming State Library.* Cheyenne. [ii] D

## STATE HISTORICAL AND SCIENTIFIC SOCIETIES.

Wyoming Academy of Art, Science, and Letters. Cheyenne. [1]

## STATE UNIVERSITIES AND TECHNICAL SCHOOLS.

University of Wyoming. Laramie City. [iii] X

## II.—LIST OF THE PRINCIPAL LIBRARIES IN THE UNITED STATES TO WHICH IT IS DESIRED TO SEND FUTURE PUBLICATIONS OF THE NATIONAL MUSEUM

[This list includes all libraries known as Government depositories, all libraries officially designated to receive certain classes of publications, including those of the U. S. Geological Survey, all additional libraries of over 10,000 volumes, a representative library in every city of over 10,000 inhabitants not otherwise supplied, and, in brackets, the State institutions, colleges of liberal arts, and State normal schools mentioned in the preceding list, all being arranged alphabetically by States and towns. The use of small capitals in the names of towns signifies that the population was more than 10,000 by the census of 1880. The figures at the right of an institution indicate the number of volumes in its library, compiled chiefly from the published reports of the Commissioner of Education. The names of all libraries containing more than 10,000 volumes are printed in italics. As in the preceding list, D indicates that the library is a Government depository; X, that it receives the publications of the U. S. Geological Survey; [i], that it receives regularly the *Smithsonian Report*; [ii], that it receives the *Report* and the *Smithsonian Miscellaneous Collections*; [iii], that it receives the two preceding and in addition the *Smithsonian Contributions to Knowledge*.]

NOTE.—This list is not intended to indicate the distribution of Smithsonian publications, but shows incidentally what publications of the Institution are sent to the libraries mentioned.

### ALABAMA.

Abbeville.			
[South East Alabama Agricultural School.]			
Athens.			
[North Alabama Agricultural School.]			
Auburn.			
[Alabama Agricultural and Mechanical College.]	1,500	[ii]	D
Birmingham.			
Alabama Club.			X
[Howard College.] (East Lake P. O.)	5,000	[iii]	D
Young Men's Christian Association.			X
Courtland.			
Public Literary and Law Library Association.			D
Demopolis.			
Marengo Institute Library.			X
East Lake (see Birmingham).			
Florence.			
[State Normal School.] (White.)	1,000		X
Greensborough.			
[Southern University.]	1,470	[iii]	D
Huntsville.			
[State Normal and Industrial School.] (Colored.)	800	[i]	
Jacksonville.			
[Jacksonville State Normal School.] (White.)	500		D
Livingston.			
[Alabama Normal College for Girls.] (White.)	250	[i]	
Marion.			
Judson Female Institute.	3,000		X
MOBILE.			
[Spring Hill College.] (Spring Hill P. O.)	25,000	[ii]	D
MONTGOMERY.			
[State and Supreme Court Library.]	17,626		D
[Montgomery State Normal University] (formerly at Marion).	400		
State Board of Health.	3,000	[i]	D
Young Men's Christian Association.			X
Selma.			
[Selma University.]	400		
Young Men's Christian Association.	1,000		X

Spring Hill (see Mobile.)			
Troy.			
Troy Normal School.	50		X
Tuscaloosa.			
[Alabama Historical Society.]	500	[i]	
Pierson Library.	1,500		X
[University of Alabama.] (University P. O.)	7,000	[iii]	D
Tuskegee.			
[Tuskegee State Normal School.] (Colored.)	3,000	[i]	
Uniontown.			
[Canebrake Agricultural Experiment Station.] (Agricultural and Mechanical College.)			
Wetumpka.			
Public Library of Wetumpka Academy.			D

## ARIZONA.

Phoenix.			
Phoenix Public Library.			X
[Territorial Library.]	5,000	[i]	D
Tempe.			
[Territorial Normal School.]			
Tombstone.			
Tombstone Public Library.	400		X
Tucson.			
Free Public Library.	800		D
[University of Arizona.]			
[College of Agriculture of the University of Arizona.]			

## ARKANSAS.

Altus.			
Central College Institute.			X
Arkadelphia.			
Ouachita College Library.			X
Batesville.			
[Arkansas College.]	800		X
Boonsborough.			
[Cane Hill College.]		[i]	X
Conway.			
Public Library.			X
Young Men's Christian Association.			X
Evening Shade.			
Evening Shade High School.			X
Fayetteville.			
[Arkansas Industrial University.]	6,000	[ii]	D
Fort Smith.			
Public School Library.			D
La Crosse.			
La Crosse Academy.			X
LITTLE ROCK.			
Architects' Society of Architects and Surveyors.			X
[Arkansas Historical Society.]			
[Arkansas State Library.]	20,000	[iii]	D
[Little Rock University.]	1,000	[i]	
[Philauder Smith College.]	500		
Pine Bluff.			
[Branch Normal College of Arkansas Industrial University.]	730		D

## CALIFORNIA.

Alameda.				
Alameda Free Library and Reading Room.	5,150	[i]	X	
Benicia.				
[College of St. Augustine.]	3,700			
Berkeley (see San Francisco).				
Biggs.				
Public School Library.			X	
Chico.				
Chico State Normal School.				
College City.				
[Pierce Christian College.]	200	[i]		
Gredley.				
Public School Library.			X	
LOS ANGELES.				
Los Angeles Public Library.	3,964		X	
[Saint Vincent's College.]	3,000			
[State Normal School.]	1,300			
[University of Southern California.]	1,000			
Marysville.				
Marysville City Library.	4,000	[iii]		
Monterey.				
Monterey Library Association.		[iii]		
Napa City.				
[Napa College.]	700			
OAKLAND.				
<i>Free Public Library.</i>	10,738	[i]	X	
Petaluma.				
Petaluma Public Library.	3,500		X	
SACRAMENTO.				
[ <i>California State Library.</i> ]	61,612	[iii]	D	
<i>Sacramento Free Library.</i>	11,778	[iii]	D	
San Buenaventura.				
Ventura Public Library.	2,500		X	
San Diego.				
San Diego Public Library.	1,600	[1]	X	
San Diego Society of Natural History.	458	[i]		
SAN FRANCISCO.				
<i>Bancroft Library (Pacific Library).</i>	45,000	[iii]		
<i>Bibliothèque de la Ligue Nationale Française.</i>	13,000	[iii]		
[ <i>California Academy of Sciences.</i> ]	10,000	[iii]		
[California Historical Society.]				
<i>Mechanics' Institute.</i>	40,000	[iii]	X D	
<i>Mercantile Library Association.</i>	55,000	[iii]	X	
[Normal Department, Girls' High School.]				
<i>Odd Fellows' Library Association.</i>	40,131	[iii]	X	
[ <i>Saint Ignatius College.</i> ]	10,000	[ii]		
<i>San Francisco Free Public Library.</i>	65,000	[iii]	D	
<i>San Francisco Law Library.</i>	25,500	[i]		
<i>Sutro Library.</i>	110,000	[iii]		
<i>Theological Seminary of San Francisco.</i>	16,000			
[ <i>University of California.</i> ] (Berkeley P. O.)	33,170	[iii]	D	
[College of Agriculture of the University of California.] (Berkeley P. O.)				

SAN JOSÉ.			
[California State Normal School.]	3,000	[i]	
San José Free Public Library.	6,500	[i]	D
[University of the Pacific.]	2,800	[ii]	
San Mateo.			
San Mateo Public Library.			X
Santa Barbara.			
Santa Barbara Free Public Library.	4,500	[ii]	
Santa Barbara Society of Natural History.	2,600	[i]	D
Santa Clara.			
[ <i>Santa Clara College.</i> ]	12,000	[iii]	
Santa Cruz.			
Free Library.	3,000	[i]	X
Santa Rosa.			
[Pacific Methodist College.]	1,000		
Free Library.	1,200		X
STOCKTON.			
Free Public Library.	8,117	[i]	D
Vacaville.			
California Normal College.	2,500		X
Woodbridge.			
[San Joaquin Valley College.]	1,000		
Woodland.			
[Hesperian College.]	400		
COLORADO.			
Boulder.			
[University of Colorado.]	2,100	[i]	D
Colorado Springs.			
[Colorado College.]	6,000	[i]	D
DENVER.			
Chamber of Commerce.			X
[Colorado Scientific Society.]		[i]	
[Colorado State Historical Society.]			
Denver Public Library.		[i]	D
[State Library.]	8,000	[iii]	D
High School Library.		[ii]	X
[University of Denver.]	1,000	[ii]	X
Durango.			
Durango Club Library.			X
Fort Collins.			
[State Agricultural College of Colorado.]	900	[i]	X
Golden.			
[State School of Mines.]	1,000	[i]	X
LEADVILLE.			
Young Men's Christian Association.	600		
CONNECTICUT.			
BRIDGEPORT.			
<i>Bridgeport Public Library and Reading Room.</i>	16,550	[iii]	D
Canaan.			
Douglas Library.	2,028		X
DANBURY.			
Danbury Library.	7,500		X
Danielsonville.			
Peoples' Library Association.	2,000		X
DERBY. (No library.)			

<b>HARTFORD.</b>			
[ <i>Connecticut Historical Society.</i> ]	21,000	[m]	
Hartford High School.	1,500		X
<i>Hartford Library Association.</i>	36,500	[iii]	X
<i>Hartford Theological Seminary.</i>	42,000	[iii]	
<i>State Library of Connecticut.</i>	15,000	[iii]	D
[ <i>Trinity College.</i> ]	28,000	[iii]	
<i>Watkinson Library of Reference.</i>	40,000		
<b>Mansfield.</b>			
[Storr's Agricultural School.] (State.) (Storrs P. O.)	939	[i]	
<b>MERIDEN.</b>			
Young Men's Christian Association.	4,800		
<b>Middletown.</b>			
<i>Berkley Divinity School.</i>	17,387		
[ <i>Wesleyan University.</i> ]	35,000	[iii]	X
<b>NEW BRITAIN.</b>			
Public High School.	420	[i]	X
[State Normal School.]	1,000	[iii]	
<b>NEW HAVEN.</b>			
American Oriental Society.	3,000	[iii]	
[Cedar Street Normal Training School.]	168		
[Connecticut Academy of Arts and Sciences.] (No Library.)			
<i>Linonian and Brother's Library.</i>	28,000		
<i>New Haven Young Men's Institute</i>	12,000	[iii]	
New Haven Public Library.			X
Peabody Museum. (Yale University.)		[i]	
[Sheffield Scientific School of Yale University.]	6,000	[ii]	X
[Welch Normal Training School.]	400		
[ <i>Yale University.</i> ]	130,000	[iii]	D
<b>NEW LONDON.</b>			
New London Public Library.			D
<b>NORWALK.</b>			
Library Corporation.	1,800		X
<b>NORWICH.</b>			
<i>Otis Library.</i>	15,640	[ii]	D
<b>STAMFORD.</b>			
Ferguson Library.	5,000		X
Storrs (see Mansfield.)			
<b>WATERBURY.</b>			
<i>Silas Bronson Library.</i>	36,500	[iii]	D
<b>Willimantic.</b>			
Dunham Hall.	2,000		X
<b>DELAWARE.</b>			
<b>Dover.</b>			
[ <i>Delaware State Library.</i> ]	15,600	[iii]	D
Dover Library.	1,890		X
Scott Library.	1,600		D
<b>Milford.</b>			
Milford Library Association.	800		X
<b>Newark.</b>			
[Delaware College.]	8,000	[iii]	X
<b>New Castle.</b>			
New Castle Library Company.	4,000	[iii]	D
<b>Seaford.</b>			
Seaford Public School.			X

## WILMINGTON.

[Historical Society of Delaware.]	6,500	[i]	
Shields Library Association.	758		X
<i>Wilmington Institute.</i>	15,632	[iii]	D

## DISTRICT OF COLUMBIA.

## WASHINGTON.

[American Historical Society.]			
<i>Army Medical Museum.</i>	76,733	[i]	
<i>Bureau of Education.</i>	17,000	[i]	
Bureau of Ethnology.		[iii]	
[Catholic University of America.]		[iii]	
Columbian Institution for the Deaf and Dumb.	3,000	[iii]	
[Columbian University.]	8,000	[iii]	
[ <i>Congressional Library.</i> ]	565,131	[iii]	
Cosmos Club.		[i]	
<i>Department of Agriculture.</i>	18,000	[iii]	
<i>Department of State.</i>	22,625	[iii]	
Engineer Department, U. S. Army (Office Chief of Engineers).		[iii]	
[ <i>Georgetown University.</i> ]	35,000	[iii]	
[ <i>House of Representatives.</i> ]	125,000	[i]	
[ <i>Howard University.</i> ]	13,000	[ii]	
Interior Department Library.	8,000	[iii]	
Metropolitan Club.		[i]	
[ <i>Miner Normal School.</i> ]	75		
[National Academy of Sciences.]			
<i>Navy Department Library.</i>	17,000	[iii]	
Quartermaster-General's Office.		[ii]	
Rotunda of United States National Museum.		[i]	
<i>Signal Office Library.</i>	10,540	[ii]	
[ <i>Smithsonian Institution.</i> ] (Books deposited in Congressional Library.)		[iii]	
<i>Surgeon-General's Office.</i>	76,733	[iii]	
<i>Treasury Department Library.</i>	18,000	[ii]	
United States Coast and Geodetic Survey.	4,500	[i]	
United States Commission of Fish and Fisheries.		[iii]	
<i>United States Geological Survey.</i>	17,255	[iii]	
<i>United States National Museum.</i>	13,000	[iii]	
<i>United States Naval Observatory.</i>	12,000	[iii]	
<i>United States Patent Office</i> (Scientific Library).	50,000	[iii]	
<i>United States Senate.</i>	30,000		
<i>War Department Library.</i>	17,500	[iii]	
Washington High School Library.		[iii]	
[Washington Normal School.]			

## FLORIDA.

De Funiak Springs (Lake De Funiak).			
De Funiak Springs Library.	500	[i]	X
[Florida State Normal College.]	180		
De Land.			
John B. Stetson University.			D
Jacksonville.			
Jacksonville Library Association.	500	[ii]	D
Lake City.			
[Florida State Agricultural and Mechanical College.]			

Milton.			
Santa Rosa Academy Public Library.	4,000	[ii]	D
Pensacola.			
Pensacola Public School Library.			X
Saint Augustine.			
[Historical Society of Florida.]			
Tallahassee.			
[ <i>Florida State Library.</i> ]	12,500		D
[Florida State Normal School.]			
Florida University.	2,200	[i]	X
Winter Park.			
[Rollins College.]	1,800		

## GEORGIA.

Acworth.			
Acworth Literary and Library Association.	484		X
Americus.			
Americus Library Association.	1,909		D
Athens.			
[ <i>University of Georgia.</i> ]	18,000	[iii]	D
ATLANTA.			
[Atlanta University.]	6,000		
[Clark University.]	2,000		
[ <i>Georgia State Library.</i> ]	45,000	[iii]	D
<i>Young Men's Library Association.</i>	11,343	[ii]	D
AUGUSTA.			
Young Men's Library Association.	5,769	[ii]	D
Bowdon.			
[Bowdon College.]	350	[i]	
Cave Spring.			
Georgia Institution for the Deaf and Dumb.	1,200	[ii]	
Cedartown.			
Cedartown Library.			X
COLUMBUS.			
Columbus Public Library.	6,000	[i]	X
Conyers.			
Rockdale Library.			X
Crawfordsville.			
Stephens' High School.			X
Cuthbert.			
[Southwest Georgia Agricultural College.]			
Dahlonega.			
[North Georgia Agricultural College.]	500	[i]	D
Gainesville.			
Gainesville College Library.			D
Young Men's Library Association.			X
Griffin.			
Granthier Club Library.			X
Hamilton.			
[West Georgia Agricultural and Mechanical College.]			
Hawkinsville.			
Hawkinsville Library and Literary Association.	1,400		X
Jefferson.			
Martin Institute.			X



<b>MACON.</b>			
[ <i>Mercer University.</i> ]	10,000		X
[ <i>Pio Nono College.</i> ]	600		
<i>Public Library and Historical Society.</i>	10,000	[iii]	D
Wesleyan Female College.	2,500	[i]	X
<b>Milledgeville.</b>			
[ <i>Middle Georgia Military and Agricultural College.</i> ]			X
<b>Newnan.</b>			
<i>College Temple.</i>	15,000		
<b>Oxford.</b>			
[ <i>Emory College.</i> ]	5,000	[iii]	X
<b>Perry.</b>			
Perry Public Academy.			X
<b>Quitman.</b>			
Brook County Library.			X
<b>Rome.</b>			
Young Men's Library Association.			D
<b>SAVANNAH.</b>			
[ <i>Georgia Historical Society.</i> ]	15,250	[iii]	D
<b>Thomasville.</b>			
Thomasville Library Association.	300		X
[ <i>South Georgia Agricultural College.</i> ]			X
<b>Waynesboro.</b>			
Waynesboro Library Association.			X
<b>West Point.</b>			
Young Men's Library Association.	1,800	[i]	D
<b>IDAHO.</b>			
<b>Boisé City.</b>			
[ <i>Idaho State Library.</i> ]	5,000		D
<b>Camas.</b>			
Camas Library.			X
<b>Lewiston.</b>			
Lewiston Public School Library.			D
<b>Murray.</b>			
Murray Library.			X
<b>ILLINOIS.</b>			
<b>Abingdon.</b>			
[ <i>Hedding College.</i> ]	1,800		
<b>Alton.</b>			
Alton Public Library.	6,000		X
<b>AURORA.</b>			
Aurora Free Public Library.	6,333		X
<b>BELLEVILLE.</b>			
Belleville Public Library.	9,702		D
<b>BLOOMINGTON.</b>			
Bloomington Library Association.	9,661	[ii]	X
[ <i>Illinois Wesleyan University.</i> ]	3,408	[iii]	D
<b>Bourbonnais Grove.</b>			
[ <i>Saint Viator's College.</i> ]	2,000		
<b>Cairo.</b>			
Cairo Public Library.	2,650	[i]	X
<b>Carbondale.</b>			
[ <i>Southern Illinois Normal University.</i> ]	3,260	[ii]	D
<b>Carrollton.</b>			
Carrollton Library Association.		[i]	D

Carthage.			
[Carthage College.]	3,000	[i]	
Champaign (see Urbana).			
[Agricultural Experiment Station of the University of Illinois.]			
CHICAGO.			
Chicago Academy of Sciences.	4,500	[iii]	
<i>Chicago Historical Society.</i>	12,024	[iii]	D
<i>Chicago Law Institute.</i>	19,000		
<i>Chicago Public Library.</i>	119,570	[iii]	D
Chicago Theological Seminary.	7,500	[iii]	
[Cook County Normal School.] (Englewood P. O.)	5,000	[i]	D
Englewood High School Library. (Englewood P. O.)	1,300		X
Married Men's Sodality and Railroad Library.			X
Newberry Library.		[iii]	D
[ <i>Saint Ignatius College.</i> ]	12,000	[i]	
Young Men's Literary Association.			X
Young Men's Christian Association.	3,500	[ii]	
Cobden.			
Cobden Library Association.	1,796		X
Danville.			
Danville High School.		[ii]	
Danville Public Library.	4,000	[i]	X
Decatur.			
Free Public Library.	7,322	[i]	X
Elgin.			
Elgin Public Library.	8,223	[i]	D
Englewood (see Chicago).			
Eureka.			
[Eureka College.]	4,500	[ii]	
Evanston.			
[ <i>Northwestern University.</i> ]	26,000	[iii]	D
Ewing.			
[Ewing College.]	1,000	[i]	X
Freeport.			
Freeport Young Men's Christian Association.			X
Galena.			
[German English College.]	500		
GALESBURG.			
<i>Galesburg Public Library.</i>	12,571		
[Knox College.]	6,600	[iii]	
[Lombard University.]	6,600	[ii]	
Gnothantic Library.			X
Greenville.			
Greenville Public Library.			X
Hillsborough.			
Hillsborough Public Library.			X
Hyde Park.			
Hyde Park High School Library.	100		X
JACKSONVILLE.			
[Illinois College.]	9,000	[iii]	X
Illinois Institution for the Education of the Deaf and Dumb.	7,284	[ii]	D
JOLIET.			
<i>Joliet Business College.</i>	11,000		

Kankakee.			
Kankakee Ladies Library Association.	2,000		X
Knoxville.			
Saint Mary's School.	900	[i]	X
Lake Forest.			
[Lake Forest University.]	5,672	[1]	X
Lebanon.			
[McKendree College.]	6,500	[iii]	
Lincoln.			
[Lincoln University.]	3,000	[i]	
Macomb.			
Macomb City Free Public Library.	2,059	[i]	X
Monmouth.			
[Monmouth College.]	2,000	[i]	D
<i>Warren County Library and Reading Room.</i>	11,196	[iii]	
Morgan Park.			
<i>Baptist Union Theological Seminary.</i>	25,000		
Mount Carroll.			
Mount Carroll Seminary.	5,000		D
Mount Morris.			
<i>Mount Morris College (Cassel Library).</i>	12,000	[iii]	X
Mount Sterling.			
Mount Sterling Library Association.			X
Mount Vernon.			
Mount Vernon Supreme Court Library.	7,000		D
Naperville.			
[Northwestern College.]	1,200		
Normal.			
[Illinois Museum of Natural History.] (University of Illinois.)		[iii]	
[Illinois State Normal University.]	3,000	[1]	D
Oak Park.			
Seoville Institute.			X
Olney.			
Olney Public Library.	2,500	[i]	D
Ottawa.			
Ottawa City High School.	1,190	[ii]	X
Paxton.			
Paxton Library.			X
PEORIA.			
<i>Peoria Public Library.</i>	25,350	[iii]	D
QUINCY.			
[Chaddock College.]	300		
Quincy Library.	6,400	[1]	X
[ <i>Saint Francis Solanus College.</i> ]	2,235		
Rantoul.			
Rantoul Literary Society.	800	[i]	X
Ravenswood.			
Ravenswood Public Library.			X
ROCKFORD.			
<i>Public Library of Rockford.</i>	13,100	[iii]	X
ROCK ISLAND.			
[Augustana College.]	7,900	[i]	X
Rock Island Public Library.	8,057	[ii]	X
Shawneetown.			
Shawneetown Public Reading Room.			X

Shelbyville.				
Shelbyville Public School Library.		600		D
SPRINGFIELD.				
[Illinois State Historical Society and Natural History Museum.]			[i]	
[ <i>Illinois State Library.</i> ]	40,000		[iii]	D
Springfield Public Library	8,000		[iii]	X
Streator.				
Streator High School.				X
Sycamore.				
Sycamore Public Library.				X
Teutopolis.				
[Saint Joseph's Diocesan College.]	2,000			
Upper Alton.				
[Shurtleff College.]	6,300		[i]	
Urbana (see Champaign).				
[University of Illinois.]	15,539		[iii]	D
Vandalia.				
Vandalia Public Library.				X
Westfield.				
[Westfield College.]	2,500		[ii]	X
Wheaton.				
[Wheaton College.]	2,500		[iii]	
INDIANA.				
Aurora.				
Aurora Public Library Association.	2,000			X
Bloomington.				
[Indiana University.]	5,000		[iii]	D
Brookville.				
Brookville Society of Natural History.	2,000		[i]	D
Covington.				
[Indiana Normal College.]	1,200			
Crawfordsville.				
[ <i>Wabash College.</i> ]	23,000		[iii]	D
Crown Point.				
Crown Point Public School Library.	500		[i]	X
Danville.				
Central Normal College.	1,300		[i]	X
EVANSVILLE.				
Willard Library.	10,000		[iii]	D
FORT WAYNE.				
Catholic Library Association.	4,700		[i]	D
[Concordia College.]	2,000		[ii]	X
Fort Wayne Public School Library.	5,500		[i]	X
Frankfort.				
Frankfort Public Library.	1,200			X
Franklin.				
[Franklin College.]	5,000		[i]	D
Greencastle.				
[ <i>De Pauw University.</i> ] (Formerly Asbury University.)	13,000		[iii]	D
Hanover.				
[Hanover College.]	6,000		[iii]	
Hartsville.				
[Hartsville College.]	1,000		[i]	
Huntingburg.				
Petoka Township Library	634			X

Huntington.			
Public School Library.	5,000	[i]	D
INDIANAPOLIS.			
[Butler University.] (Irvington P. O.)	3,000	[iii]	D
[Indiana Historical Society.]	1,200		
<i>Indiana State Law Library.</i>	14,500		
[ <i>Indiana State Library.</i> ]	23,000	[iii]	D
Indianapolis High School Library.			X
[Indianapolis Normal School.]	200		
<i>Indianapolis Public Library.</i>	39,500	[iii]	X
Medical College of Indiana.	2,000	[ii]	
Irvington (see Indianapolis).			
Kokomo.			
Kokomo Free Library.			X
LA FAYETTE.			
La Fayette Public Library.	8,600		D
[Purdue University.]	2,300	[ii]	
[School of Agriculture, Horticulture, and Veterinary Science.] (Purdue University.)			
La Porte.			
High School Library.			X
La Porte City Library.			X
Public Library and Natural History Society.		[ii]	
LOGANSPORT.			
American Normal College.	820		X
Marion.			
Marion Public School Library.			X
Merom.			
[Union Christian College.]	700	[ii]	
Moore's Hill.			
[Moore's Hill College.]	1,200	[ii]	X
Muncie.			
Muncie Public Library.	6,111		D
NEW ALBANY.			
New Albany High School.		[iii]	
New Harmony.			
New Harmony Working Men's Institute.	8,000	[i]	X
Notre Dame.			
[ <i>University of Notre Dame du Lac.</i> ]	25,000	[iii]	D
Plainfield.			
Plainfield Central Academy.			X
RICHMOND.			
[Earlham College.]	5,000	[i]	X
<i>Morrison Library.</i>	13,500	[i]	
Ridgeville.			
[Ridgeville College.]	250	[i]	
Rising Sun.			
Natural History Club.	429	[i]	X
Rockville.			
Rockville High School Library.			X
Saint Mary's.			
Saint Mary's Institute.			X
Saint Meinrad.			
[ <i>Saint Meinrad's College and Abbey.</i> ]	12,508	[ii]	X

SOUTH BEND.			
Young Men's Christian Association.	1,000	[i]	
Spiceland.			
Spiceland Academy Library Association.	1,200		X
TERRE HAUTE.			
[Indiana State Normal School.]	4,000	[ii]	X
[Rose Polytechnic Institute.]	4,212	[iii]	
Valparaiso.			
Northern Indiana Normal School.	5,000	[i]	D
Vincennes.			
Vincennes University.	4,000	[i]	D
Wabash.			
Noble Township Library.	650		X
Washington.			
Washington Public School Library.			X

## INDIAN TERRITORY.

Tahlequah.			
[Cherokee National Council Library.]	2,100		
[Cherokee National Female Seminary.]	600	[i]	
[Cherokee National Male Seminary.]	1,000	[i]	

## IOWA.

Ames.			
[Iowa State College of Agricultural and Mechanical Arts.]	800	[ii]	
Audubon.			
Audubon High School Library.			X
Bloomfield.			
Bloomfield Library.	400		X
Boone.			
Public Library Association.		[i]	D
BURLINGTON.			
Burlington University.	3,500	[iii]	
Cedar Falls.			
Public Library.	2,600	[i]	X
[Iowa State Normal School.]	1,760	[i]	
CEDAR RAPIDS.			
<i>Grand Lodge of Masons of Iowa.</i>	10,000	[iii]	X
Charles City.			
Charles City Free Public Library.			X
Clarinda.			
Clarinda Young Men's Christian Association.			D
Clinton.			
Clinton Public School Library.	2,800		X
College Springs.			
[Amity College.]	1,000	[i]	X
COUNCIL BLUFFS.			
Free Public Library.	5,300	[i]	D
DAVENPORT.			
<i>Davenport Academy of Natural Sciences.</i>	10,000	[iii]	
[Griswold College.]	8,000	[iii]	
<i>Library Association.</i>	10,500		D
Decorah.			
[Norwegian Lutheran College.]	4,300	[i]	X

DES MOINES.			
[ <i>Drake University.</i> ]	22,000	[i]	X
[ <i>Iowa State Library.</i> ]	22,554	[iii]	D
[ <i>University of Des Moines.</i> ]	2,000		
[ <i>West Des Moines Training School.</i> ]	40		
Public Library.	5,800		D
DEBUCQUE.			
[ <i>Saint Joseph's College.</i> ]	2,000		
<i>Young Men's Library Association.</i>	13,000		D
Fairfield.			
Jefferson County Library Association.	8,500	[ii]	D
[ <i>Parsons College.</i> ]	2,400	[i]	X
Fayette.			
[ <i>Upper Iowa University.</i> ]	2,500	[iii]	D
Grinnell.			
[ <i>Iowa College.</i> ]	12,250	[iii]	D
Hopkinton.			
[ <i>Lenox College.</i> ]	800		
Hull.			
Pattersonville Institute.			X
Humboldt.			
Humboldt College.		[iii]	
Independence.			
Independence Free Public Library.	2,414	[i]	X
Indianola.			
[ <i>Simpson College.</i> ]	1,500	[ii]	X
Iowa City.			
[ <i>Iowa Academy of Sciences.</i> ]			
[ <i>State Historical Society of Iowa.</i> ]	11,000	[iii]	
[ <i>State University of Iowa.</i> ]	18,000	[iii]	D
KEOKUK.			
Keokuk Library Association.	7,500	[iii]	X
Le Mars.			
Northwestern Normal Institute and Business College.			D
Missouri Valley.			
Missouri Valley High School Library.			X
Mount Pleasant.			
[ <i>German College.</i> ]	585		
[ <i>Iowa Wesleyan University.</i> ]	2,000	[iii]	D
Mount Pleasant Public Library.	4,030	[i]	X
Mount Vernon.			
[ <i>Cornell College.</i> ]	7,500	[iii]	X
Osage.			
Cedar Valley Seminary.	650	[ii]	
Oskaloosa.			
[ <i>Oskaloosa College.</i> ]	2,000	[iii]	
[ <i>Penn College.</i> ]	2,000	[i]	X
Pella.			
[ <i>Central University of Iowa.</i> ]	2,000		
Shenandoah.			
Western Normal College and Shenandoah Commercial Institute. (Private.)	3,006	[i]	X
Tabor.			
[ <i>Tabor College.</i> ]	5,000	[i]	

Toledo.				
[Western College.]	3,200			
Washington.				
Washington Public Library.				X
Waterloo.				
Waterloo Library Association.	1,500			D
KANSAS.				
ATCHISON.				
Atchison Public Library.	2,894			X
[Saint Benedict's College.]	5,000	[i]		
Baldwin City.				
[Baker University.]	3,000	[i]		
Dodge City.				
Dodge City Library.				X
Emporia.				
[College of Emporia.]	700			
[Kansas State Normal School.]	2,000	[i]		X
Garnett.				
Garnett Library Association.	455			X
Harlan.				
Gould College.	350			D
Hiawatha.				
Morrill Library.				D
Highland.				
[Highland University.]	5,000			
Holton.				
Campbell University.	780	[ii]		X
Independence.				
Independence Ladies' Library Association.	603			X
Lawrence.				
[ <i>University of Kansas.</i> ] .	10,000	[iii]		D
Lawrence City Library.	4,000	[ii]		D
LEAVENWORTH.				
Public Reading Room.			[i]	
Lecompton.				
[Lane University.]				
Manhattan.				
[Kansas State Agricultural College.]	5,559	[iii]		D
Mankato.				
Mankato High School Library.				X
McPherson.				
McPherson City Library.				X
Newton.				
Newton Library.	751			D
Oswego.				
Oswego College for Young Ladies.				X
Oswego Public Library.				D
Ottawa.				
[Ottawa University.]	1,160	[i]		
Paola.				
Paola City Library.	3,100	[i]		X
Saint Mary's.				
[Saint Mary's College.]	8,000			X
Salina.				
[Kansas Wesleyan University.]	159	[i]		X



## TOPEKA.

[Kansas Academy of Science.]		[ii]	
[ <i>Kansas State Historical Society.</i> ]	24,121	[ii]	D
[ <i>Kansas State Library.</i> ]	23,988	[iii]	D
Topeka Free Public Library.			D
[Washburn College.]	5,000	[ii]	X

## Troy.

Troy Public Library.			X
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## Wichita.

Garfield College.			X
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## KENTUCKY.

## Ashland.

Ashland Reading Room Association.			D
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## Bardstown.

Saint Joseph's College.	800		D
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## Berea.

[Berea College.]	4,000		X
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## Bowling Green.

[Ogden College.]	600	[1]	D
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## Burkesville.

Alexander College.	1,000		X
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## Cecilian.

Cecilian College.	2,000		X
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## Clinton.

Clinton College Reference Library.	522		X
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## Columbia.

Columbia Christian College.			X
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## COVINGTON.

Covington High School Library.	2,000		D
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Covington Law Library Association.			X
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## Danville.

[Center College.]	5,000	[iii]	D
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<i>Danville Theological Seminary.</i>	10,000		
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## Earlington.

Catholic School Library at Saint Bernards.			X
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## Eminence.

[Eminence College.]	2,000	[i]	
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## Farndale.

Kentucky Military Institute.	5,000	[ii]	
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## Frankfort.

Kentucky Geological Survey.	1,050	[iii]	
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[Kentucky Historical Society.]	400		
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[ <i>Kentucky State Library.</i> ]	33,900	[i]	D
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## Frenchburg.

Frenchburg High School Library.			X
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## Georgetown.

[Georgetown College.]	8,000	[iii]	D
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Georgetown Public Library.			X
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## Glasgow.

Glasgow Normal School.	1,500	[i]	X
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## Hartford.

Hartford College.			X
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## Hopkinsville.

[South Kentucky College.]	1,000		
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## Jackson.

Jackson Academy Library.	1,000		X
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## LEXINGTON.

[State College of Kentucky.] (Agricultural and Mechanical.)		[i]	
Hamilton Female College.	500		X
[Kentucky University.]	13,400	[iii]	D
Lexington Library.	15,000		

## LOUISVILLE.

Louisville Library Association.	10,000	[ii]	
Louisville Trade and Labor Assembly.			D
Male High School.		[i]	X
Polytechnic Society of Kentucky.	40,533	[iii]	D
Southern Baptist Theological Seminary.	8,500	[ii]	X

## Madisonville.

National Institute Library.			X
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## Mayfield.

Western Kentucky College.		[i]	X
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## Maysville.

Limestone Lodge Knights of Pythias.			X
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## Millersburg.

[Kentucky Wesleyan College.]	1,500		
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## Murray.

[Murray Male and Female Institute and West Kentucky Normal School.]	45		
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## NEWPORT.

Old Fellows' Library.	3,600		X
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## North Middletown.

[Kentucky Classical and Business College.]	200		
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## Princeton.

Princeton Collegiate Institute.	800		X
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## Richmond.

[Central University.]	7,000	[ii]	X
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## Russellville.

[Bethel College.]	2,000	[iii]	X
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## Saint Mary's.

[Saint Mary's College.]	5,000		X
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## Vanceburgh.

Riverside Seminary.			X
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## Versailles.

Versailles Public Library.			X
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## LOUISIANA.

## Baton Rouge.

College Institute.			X
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[Louisiana State Historical Society.]		[i]	
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[Louisiana State University and Agricultural and Mechanical College.]	18,085	[iii]	D
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## Calhoun.

[North Louisiana Experiment Station.] (Agricultural and Mechanical College.)			
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## Convent.

[Jefferson College.] (Saint Mary's.)		[i]	X
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## Grand Coteau.

[Saint Charles College.]	8,000	[iii]	X
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## Jackson.

[Centenary College of Louisiana.]	2,000	[i]	X
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## Keachi.

[Keachi College.]	200		X
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Kenner.			
[Sugar Experiment Station.] (Agricultural and Mechanical College.)			
Monroe.			
Monroe Public Library.			D
Mount Lebanon.			
Mount Lebanon College Library.	400		X
Natchitoches.			
[Louisiana State Normal College.]	500		D
NEW ORLEANS.			
<i>City Public School and Lyceum Library.</i>	17,000	[iii]	D
[ <i>College of the Immaculate Conception.</i> ]	13,000		
Howard Memorial Library.			X
[New Orleans Normal School.]	200		
<i>New Orleans Law Association.</i>	10,000		
<i>New Orleans Public School and Lyceum Library.</i>	17,000		
[New Orleans University.]	2,000		D
Soulé Commercial College and Literary Institute.	1,964	[i]	X
[Southern University.] (Colored.)	225		
[ <i>State Library of Louisiana.</i> ]	21,000	[iii]	D
[Straight University.]	400		
[ <i>Tulane University of Louisiana.</i> ]	15,500	[iii]	D
Shreveport.			
[Thatcher Institute.]	250		
Winsted.			
Gilbert Seminary.			D
MAINE.			
Augusta.			
[ <i>Maine State Library.</i> ]	41,000	[iii]	D
BANGOR.			
<i>Bangor Public Library.</i>	23,255	[iii]	D
<i>Bangor Theological Seminary.</i>	17,000	[iii]	
BIDDEFORD.			
Biddeford Public Library.	4,000		
Brunswick.			
[ <i>Bowdoin College.</i> ]	35,000	[iii]	D
Bucksport.			
East Maine Conference Seminary.	3,200	[i]	X
Calais.			
Saint Croix Library.	4,000		X
Castine.			
[Eastern State Normal School.]	1,300		
Dexter.			
Dexter Town Library.	2,300		X
Ellsworth.			
Ellsworth City Library.	2,560		X
Farmington.			
[State Normal Training School.]	1,712		
Gorham.			
[State Normal School.]	1,687		
Grant Isle and Fort Kent.			
[Madawaska Training School.]	200		
Hebron.			
Hebron Academy (Hamlin Library.)	600	[ii]	

Kent's Hill.			
Maine Wesleyan Seminary and Female College.	4,515		X
Kittery.			
Rice Public Library.	2,700	[i]	X
LEWISTON.			
{ Bates College. }	9,237	[i]	D
Manufacturers and Mechanics' Library Association.	9,085	[ii]	X
Norway.			
Norway Public Library.	1,200		X
Orono.			
[Maine State College of Agriculture and the Mechanic Arts.]	6,500	[iii]	X
PORTLAND.			
[ <i>Maine Historical Society.</i> ]	10,000	[iii]	D
[Normal Training and Practice Class.]	216		
<i>Portland Public Library.</i>	31,000	[iii]	D
Portland Society of Natural History.	1,300	[iii]	
Saco.			
York Institute.	1,100	[ii]	X
Waterville.			
[ <i>Colby University.</i> ]	21,000	[iii]	D
MARYLAND.			
Agricultural College.			
[Maryland Agricultural College.]	2,000	[iii]	
Annapolis.			
[ <i>Maryland State Library.</i> ]	75,000	[iii]	D
[ <i>Saint John's College.</i> ]	6,000	[iii]	D
<i>United States Naval Academy.</i>	26,898	[iii]	
BALTIMORE.			
<i>Archiepiscopal Library.</i>	15,000		
[Baltimore City College.]	5,000		
Calumet Club.			X
<i>Enoch Pratt Free Library of Baltimore City.</i>	40,888	[iii]	D
[ <i>Johns Hopkins University.</i> ]	30,000	[iii]	D
<i>Library Company of the Baltimore Bar.</i>	10,000		
<i>Loyola College.</i>	12,000	[ii]	X
[Maryland Academy of Sciences.]	800	[ii]	
<i>Maryland Historical Society.</i>	20,000	[iii]	D
<i>Maryland Institute for the Promotion of Mechanic Arts.</i>	20,515	[iii]	
[Maryland State Normal School.]	2,516	[ii]	
<i>Mercantile Library Association of Baltimore.</i>	40,000	[iii]	
Mount Clare Library.			X
<i>Odd Fellows' Library.</i>	21,952		
<i>Peabody Institute.</i>	82,000	[iii]	D
<i>Saint Mary's University and Theological Seminary of Saint Sulpice.</i>	26,000	[iii]	
Catonsville.			
Catonsville Library Association.	3,000		X
Charlotte Hall.			
Charlotte Hall School Library.	1,000		X
Chestertown.			
[Washington College.]	2,000	[iii]	X
College of Saint James.			
College of Saint James (High School).	8,000	[iii]	
CUMBERLAND (No public library.)			
Easton.			
Easton High School.			X

Ellicott City.			
[ Rock Hill College. ]	6,300	[ i ]	X
[ Saint Charles College. ]	9,900		
Emmitsburg.			
[ Mount Saint Mary's College. ]	8,000	[ iii ]	
Hagerstown.			
Hagerstown Library Association.			X
Hechester.			
<i>Mount Saint Clement's College.</i>	10,600		
New Windsor.			
[ New Windsor College and Windsor Female College. ]	3,000		
Reisterstown.			
Hannah Moore Academy.			X
Sandy Springs.			
Sandy Springs Library.			X
Westminster.			
[ Western Maryland College. ]	1,000	[ ii ]	D
Westminster Library.			X
Woodstock.			
<i>Woodstock College.</i>	67,000	[ iii ]	

## MASSACHUSETTS.

Amherst.			
[ <i>Amherst College.</i> ]	40,000	[ iii ]	D
[ Massachusetts Agricultural College. ]	4,400	[ ii ]	
Andover.			
<i>Andover Theological Seminary.</i>	42,938	[ iii ]	
ATTLEBOROUGH.			
Attleborough Free Public Library.	2,400		
Beverly.			
<i>Public Library.</i>	10,211	[ i ]	
BOSTON.			
[ <i>American Academy of Arts and Sciences.</i> ]	18,000	[ iii ]	
American Board of Commissioners for Foreign Missions.	7,273	[ iii ]	
<i>American Congregational Association.</i>	25,450	[ i ]	X
American Statistical Association.		[ iii ]	
<i>Boston Athenæum.</i>	150,261	[ iii ]	D
Boston Chamber of Commerce.			D
[ <i>Boston College.</i> ]	10,000	[ ii ]	X
<i>Boston General Theological Society.</i>	15,000		
<i>Boston Library Society.</i>	26,000	[ iii ]	
<i>Boston Medical Library Association.</i>	15,000	[ ii ]	
[ Boston Normal School. ]			
<i>Boston Public Library.</i>	434,837	[ iii ]	D
<i>Boston Social Law Library.</i>	19,500		
<i>Boston Society of Natural History.</i>	30,000	[ iii ]	
[ <i>Boston University.</i> ]	12,000	[ ii ]	
[ <i>Massachusetts Historical Society.</i> ]	31,000	[ iii ]	D
[ Massachusetts Institute of Technology. ]	4,117	[ iii ]	
[ Massachusetts Normal Art School. ]	300		
Naval Library and Institute (United States).	2,390	[ iii ]	
<i>New England Historic-Genealogical Society.</i>	20,778	[ iii ]	
[ <i>State Library of Massachusetts.</i> ]	60,000	[ iii ]	D
Bridgewater.			
[ State Normal School. ]	4,000	[ ii ]	

Brockton.			
<i>Brockton Public Library.</i>	10,341	[ i ]	
Brookline.			
<i>Brookline Public Library.</i>	30,842	[ ii ]	
CAMBRIDGE.			
<i>Cambridge Public Library.</i>	18,000		
[ <i>Divinity School, Harvard.</i> ] (Harvard College.)	17,400		
[ <i>Harvard University.</i> ]	239,500	[ iii ]	D
[ <i>Law School, Harvard.</i> ] (Harvard College.)	21,600		
[ <i>Museum of Comparative Zoology.</i> ] (Harvard College.)	17,600	[ iii ]	
<i>Porcelain Club.</i> (Harvard College.)	10,000		
[ <i>Peabody Museum of American Archaeology and Ethnology.</i> ] (Harvard College.)	795	[ iii ]	
Cambridgeport.			
Cambridge Public Library.		[ ii ]	
CHELSEA.			
Chelsea Public Library.	8,646		X
CHICOPEE.			
Chicopee Town Library.	8,300		
Clinton.			
<i>Bigelow Free Public Library.</i>	13,000		
College Hill.			
[ <i>Tuft's College.</i> ]	22,000	[ iii ]	X
Concord.			
<i>Concord Free Public Library.</i>	19,643	[ iii ]	X
Cumington.			
Bryant Free Library.	5,300		X
Danvers.			
<i>Peabody Institute and Library.</i>	12,000	[ ii ]	
Dedham.			
Dedham Public Library.	8,920		D
FALL RIVER.			
Fall River Public Library.		[ iii ]	X
[ <i>Fall River Training School.</i> ]	300		
FITCHBURG.			
<i>Fitchburg Public Library.</i>	17,000		X
Framingham.			
<i>Framingham Town Library.</i>	12,000		X
[ <i>State Normal School.</i> ]	2,000		
GLOUCESTER.			
Sawyer Free Library.	7,000	[ iii ]	
HAVERHILL.			
<i>Haverhill Public Library.</i>	39,268	[ iii ]	X
[ <i>Haverhill Training School.</i> ]	50		
Hingham.			
Hingham Public Library.	5,800		X
Hingham Centre.			
Hingham Public Library.	5,800	[ iii ]	
HOLYOKE.			
<i>Holyoke Public Library.</i>	11,000		X
Ipswich.			
<i>Ipswich Public Library.</i>	10,000	[ ii ]	
Jamaica Plains.			
[ <i>Bussey Institution.</i> (Harvard University.) <i>Agricultural</i> <i>and Horticultural.</i> ]	2,700	[ ii ]	

Lancaster.			
<i>Lancaster Town Library.</i>	16,281	[iii]	
LAWRENCE.			
<i>Lawrence Public Library.</i>	27,322	[iii]	X
[Lawrence Training School.]	125		
Leominster.			
<i>Public Library.</i>	10,800	[i]	
Lexington.			
<i>Carey Memorial Library.</i>	10,000	[ii]	
LOWELL.			
<i>Lowell City Library.</i>	30,000	[iii]	X
<i>Middlesex Mechanics' Association.</i>	20,000	[iii]	D
LYNN.			
<i>Lynn Free Public Library.</i>	34,411	[ii]	D
MALDEN.			
<i>Malden Public Library.</i>	10,724	[i]	X
MARLBOROUGH.			
Marlborough Free Public Library.	8,600		X
Medford.			
<i>Medford Public Library.</i>	10,260		
Middleborough.			
Middleborough Public Library.	3,955		X
Milton.			
<i>Milton Public Library.</i>	10,000		X
Nantucket.			
Nantucket Athenæum.	6,500	[iii]	
Natick.			
<i>Morse Institute.</i>	13,647		
NEW BEDFORD.			
<i>Free Public Library of New Bedford.</i>	50,000	[iii]	D
NEWBURYPORT.			
<i>Newburyport Public Library.</i>	23,282	[iii]	X
NEWTON.			
<i>Newton Free Library.</i>	23,309	[ii]	X
Newton Centre.			
<i>Newton Theological Institution.</i>	18,000	[iii]	
NORTH ADAMS.			
North Adams Public Library.	5,777		
NORTHAMPTON.			
<i>Northampton Free Public Library.</i>	20,000	[iii]	
[Smith College.]	5,000	[ii]	X
North Easton.			
<i>Ames Free Library.</i>	11,059		
Peabody.			
<i>Peabody Institute.</i>	25,507	[iii]	
PITTSFIELD.			
<i>Berkshire Athenæum.</i>	16,000	[i]	X
QUINCY.			
<i>Thomas Crane Public Library.</i>	14,000	[ii]	X
Randolph.			
<i>Turner Free Library.</i>	10,000		
Roxbury.			
<i>Fellows' Athenæum (formerly Roxbury Athenæum).</i>		[iii]	
SALEM.			
<i>Essex Institute.</i>	37,000	[iii]	D
Peabody Academy of Science.	5,000	[iii]	

SALEM—Continued.			
<i>Salem Athenæum.</i>	19,000	[iii]	
[Salem State Normal School.]	5,000		
SOMERVILLE.			
<i>Somerville Public Library.</i>	12,637		
Southbridge.			
<i>Southbridge Public Library.</i>	10,180	[i]	X
South Hadley.			
<i>Mount Holyoke Female Seminary.</i>	11,000	[ii]	
South Natick.			
Historical and Natural History and Library Society.	965	[ii]	
Spencer.			
Spencer Public Library.	6,000		X
SPRINGFIELD.			
<i>City Library Association.</i>	55,000	[iii]	X
TAUNTON.			
<i>Public Library.</i>	24,434	[iii]	D
WALTHAM.			
<i>Waltham Public Library.</i>	13,000	[ii]	
Watertown.			
<i>Free Public Library.</i>	15,791	[iii]	
Wayland.			
<i>Wayland Free Public Library.</i>	10,000	[i]	
Wellesley.			
[ <i>Wellesley College.</i> ]	30,321	[iii]	
Westfield.			
<i>Westfield Athenæum.</i>	14,000		
[Westfield State Normal School.]	2,000		
WEYMOUTH.			
Tuft's Library.	9,114	[i]	
Williamstown.			
[ <i>Williams College.</i> ]	34,000	[iii]	D
Winchester.			
Winchester Public Library.	6,300	[ii]	
WOBBURN.			
<i>Woburn Public Library.</i>	23,789	[iii]	X
WORCESTER.			
<i>American Antiquarian Society.</i>	80,000	[iii]	D
[Clark University.]		[iii]	
<i>Free Public Library of the City of Worcester.</i>	63,941	[iii]	D
[ <i>College of the Holy Cross.</i> ]	14,000	[iii]	
[Massachusetts State Normal School.]	6,329	[i]	
Worcester County Free Institute of Industrial Sciences.	1,200	[ii]	
<i>Worcester Society of Antiquity.</i>	10,000	[i]	

## MICHIGAN.

Adri:			
[Adrian City Training School for Teachers.]			
[Adrian College.]	4,000	[iii]	
Agricultural College.			
[Michigan Agricultural College.]	7,474	[iii]	X
Albion.			
[Albion College.]	5,621	[iii]	X
Alma.			
Alma College.			X



Ann Arbor.			
[ <i>University of Michigan.</i> ]	60,201	[ iii ]	D
Battle Creek.			
[ Battle Creek College. ]	1,300	[ i ]	
Battle Creek Public School Library.	7,000	[ i ]	D
BAY CITY.			
<i>Bay City Public Library.</i>	10,000		D
Benzonia.			
[ Grand Traverse College. ]			
Big Rapids.			
Big Rapids Public School Library.	1,665		X
Cassopolis.			
Cassopolis Public School Library.	-		X
DETROIT.			
Detroit College.	4,850	[ i ]	D
Detroit Scientific Association.	750	[ i ]	X
[ Historical Society of Michigan. ]		[ i ]	
<i>Public Library of the City of Detroit.</i>	59,653	[ iii ]	D
EAST SAGANAW.			
Hoyt Public Library.	6,531		X
Escanaba.			
Escanaba High School Library.	800		X
Grand Haven.			
Akley College.			X
GRAND RAPIDS.			
<i>Grand Rapids Public Library.</i>	17,000	[ ii ]	D
Hillsdale.			
[ Hillsdale College. ]	7,060	[ iii ]	X
Holland.			
[ <i>Hope College.</i> ]	6,923		X
Houghton.			
Houghton Historical Society and Mining Institu	500		D
Ionia.			
Ionia Public School Library.	500		X
JACKSON.			
Jackson Public Library.	5,338	[ i ]	D
Kalamazoo.			
[ Kalamazoo College. ]	3,376	[ iii ]	
<i>Kalamazoo Public Library.</i>	11,419	[ i ]	D
Ladies' Library Association.	3,290	[ ii ]	
Laosling.			
[ <i>Michigan State Library.</i> ]	46,000	[ iii ]	D
Lapeer.			
Lapeer High School Library.	500		X
Manistee.			
Manistee Public School Library.			D
MUSKEGON.			
Muskegon Public School Library.	4,007	[ i ]	X
Olivet.			
[ <i>Olivet College.</i> ]	14,700	[ ii ]	
Orchard Lake.			
Michigan Military Academy.	650	[ i ]	D
Petoskey.			
Ladies' Library Association.	335		X

Pontiac.			
Ladies' Library Association.	925		X
Port Huron.			
Ladies' Library Association of Port Huron.	3,000	[ii]	D
SAGINAW.			
Saginaw Public and Union School Library.	4,000		
St. Clair.			
Union School Library.	300		X
Sault de Ste. Marie.			
Sault de Ste. Marie Public School Library.			X
West Bay City.			
<i>Sage Public Library.</i>	12,000	[i]	X
Wyandotte.			
Wyandotte Public Library.	1,000		X
Ypsilanti.			
[State Normal School.]	7,938	[i]	X
MINNESOTA.			
Albert Lea.			
Albert Lea College for Young Ladies.		[i]	X
Alexandria.			
Alexandria Public Library.	1,025	[i]	X
Collegeville.			
[Saint John's University.]	9,500		
Duluth.			
Duluth Chamber of Commerce.			X
Duluth Public Library.			X
Young Men's Christian Association Reading Room.		[ii]	
Faribault.			
Faribault Public Library.			D
Hamline.			
[Hamline University.]	3,500	[i]	X
Mankato.			
[State Normal School.]	2,500	[i]	D
MINNEAPOLIS.			
[College of Agriculture of the University of Minnesota.]			
<i>Minneapolis Public Library.</i>	31,000	[iii]	
[Minnesota Academy of Natural Sciences.]		[i]	
[ <i>University of Minnesota.</i> ]	21,000	[iii]	D
[Augsburg Seminary.]	1,000		
Moorhead.			
[Moorhead State Normal School.]			
New Ulm.			
New Ulm Turneverein Library.	1,064		X
Northfield.			
[Carleton College.]	8,000	[ii]	X
Saint Anthony Park. (See Minneapolis.)			
Saint Cloud.			
Saint Cloud City Library.	1,600		X
[State Normal School.]	6,000	[ii]	D
SAINT PAUL.			
[ <i>Minnesota Historical Society.</i> ]	12,338	[iii]	D
<i>Saint Paul Public Library.</i>	11,500	[ii]	X
[ <i>State Library.</i> ]	14,142	[iii]	D
Saint Peter.			
Gustavus Adolphus College.	2,000		X

Stillwater.			
Stillwater Library Association.	2,600	[iii]	D
WINONA.			
[State Normal School.]	5,000	[i]	D
Winona Free Library.	3,000	[i]	X

## MISSISSIPPI.

Agricultural College. (See Starkville.)			
Blue Mountain.			
Blue Mountain Female College.	443	[i]	Z
Brookham.			
Whitworth Female College.	600		X
Buena Vista.			
Buena Vista Normal College.			X
Carrolton.			
Carrolton Female College.	700		X
Carthage.			
Carthage High School Public Library.			X
Clinton.			
Central Female Institute.	2,000		X
[Mississippi College.]	2,000	[i]	D
Columbus.			
Columbus Public Library.	1,895	[i]	D
Female Industrial College.		[ii]	
Daleville.			
Cooper Normal College.	3,500	[ii]	
Giltsborough.			
Giltsborough College.			X
Greenville.			
Greenville Public Library.	2,200		D
Grenada.			
Grenada Female College.			X
Harpersville.			
Harpersville Public Library.			X
Holly Springs.			
[Mississippi State Normal School.]	3,000		D
[Rust University.]	1,000		
Holmesville.			
[Kavanaugh College.]			
Jackson.			
[Mississippi Historical Society.]		[i]	
[State Library.] (Smithsonian publications transferred to Agricultural and Mechanical College.)	40,000		D
Jefferson.			
Jefferson Academy.			X
Natchez.			
Natchez Library Association.	3,100	[i]	D
Oxford.			
[University of Mississippi.] (University P. O.)	12,000	[iii]	D
Rodney.			
[Aleorn Agricultural and Mechanical College.] (Colored.)	1,353	[i]	
Starkville.			
[Agricultural and Mechanical College of Mississippi.]	2,312	[iii]	D
Summit.			
Lea Female College.	300	[i]	X

Tongaloo.				
[Tongaloo University.]	500			
VICKSBURG. (No public library.)				
Washington.				
Jefferson College. (Academy.)	2,000	[ii]		X
West Point.				
West Point Male and Female Academy.				X
MISSOURI.				
Albany.				
Albany Public School.				X
Avalon.				
Avalon College of the United Brethren in Christ.	500	[i]		X
Bolivar.				
[Southwest Baptist College.]	600	[i]		
Boonville.				
Kemper Family School.	1,200			X
Cameron.				
Cameron Library.	422			X
Canton.				
[Christian University.]	600			
Cape Girardeau.				
[Missouri State Normal School.] (Third District.)	1,800			X
[ <i>St. Vincent's College.</i> ]	10,000			D
Carthage.				
Public School Library.	527			D
Chillicothe.				
Chillicothe High School Library.				D
Clinton.				
Baird College.				X
Columbia.				
[Agricultural and Mechanical College.]	1,000			
[ <i>University of Missouri.</i> ]	14,520	[iii]		D
Denver.				
Denver Public Library.				X
Edinburgh.				
[Grand River College.]	450	[i]		
Fayette.				
[Central College.]	4,300	[ii]		
Howard Female College.	600			X
Fulton.				
[Westminster College.]	2,500			D
Gallatin.				
Gallatin Public School Library.				D
Glasgow.				
[Lewis College.]	5,000			
[Pritchett School Institute.]	300	[i]		
HANNIBAL.				
Hannibal Public Library.				
Independence.				
Independence Young Men's Christian Association.				X
Jefferson City.				
[Lincoln Institute.]	850			X
[ <i>Missouri State Library.</i> ]	18,000	[iii]		D
KANSAS CITY.				
Kansas City Public Library.	12,000	[ii]		D

Keytesville.			
Keytesville Library.			X
Kirksville.			
[Missouri State Normal School.] (First District.)	1,127	[iii]	D
La Grange.			
[La Grange College.]	1,800	[i]	
Liberty.			
[William Jewell College.]	4,000	[ii]	
Marionville.			
Marionville Collegiate Institute.	350		X
Morrisville.			
[Morrisville College.]	600		
Nevada.			
Nevada Public School Library.	400		X
Parkville.			
Parkville College.	1,500	[i]	X
Rolla.			
[Missouri School of Mines and Metallurgy, University of Missouri.]		[i]	X
SAINT JOSEPH.			
Mechanical and Scientific Library Association.			D
SAINT LOUIS.			
[College of the Christian Brothers.]	5,000		D
<i>Law Library Association of St. Louis.</i>	14,320		
Missouri Botanical Gardens.	3,000	[ii]	
[Missouri Historical Society.]	4,000	[i]	D
[ <i>Saint Louis Academy of Sciences.</i> ]	10,000	[iii]	
Saint Louis Labor Library.			X
<i>Saint Louis Mercantile Library.</i>	65,657	[iii]	D
[ <i>Saint Louis Normal School.</i> ]	500		
<i>Saint Louis Public Library.</i>	60,000	[iii]	D
[ <i>Saint Louis University.</i> ]	25,000	[iii]	D
Saint Theresa's School.			X
[Washington University.]	8,000	[iii]	
Sedalia.			
Sedalia Natural History Society.	500	[i]	X
Young Men's Christian Association.	600		X
Springfield.			
[ <i>Drury College.</i> ]	20,000	[iii]	D
Knights of Labor Library.			X
Warrensburgh.			
[State Normal School.] (Second District.)	1,500	[ii]	
Warrenton.			
[Central Wesleyan College.]	3,600	[i]	
MONTANA.			
Deer Lodge.			
[College of Montana.]	1,000		X
Helena.			
[Historical Society of Montana.]	5,000	[ii]	D
[Montana State Library.]	4,000	[i]	D
NEBRASKA.			
Beatrice.			
Beatrice Public Library.			X
Central City.			
[Nebraska Central College.]	300		

Crete.				
[Doane College.]	3,350	[ii]	X	
Franklin.				
Franklin Academy.	550	[i]	X	
Fremont.				
Fremont Normal School Library.			X	
Fremont Reading Room Library.			D	
Hastings.				
Hastings College.	1,200		D	
Humboldt.				
Brunn Memorial Public Library.	2,000		X	
LINCOLN.				
Industrial College of the University of Nebraska.				
[State Historical Society of Nebraska.]	349	[i]		
[ <i>Nebraska State Library.</i> ]	24,398	[iii]	D	
[University of Nebraska.]	8,382	[i]	D	
Nebraska City.				
Ladies' Library Association.	1,743		D	
Nebraska Institute for the Blind.	400		X	
Neligh.				
[Gates College.]	3,000	[i]	X	
Norfolk.				
Norfolk Public Library.			X	
Omaha.				
[Creighton College.]	5,300	[i]	X	
<i>Omaha Public Library.</i>	14,237	[iii]	D	
Pern.				
[State Normal School.]	3,250	[ii]	X	
York.				
[Methodist Episcopal College of Nebraska.]				
NEVADA.				
Carlin.				
Carlin Library Association.	1,777		X	
Carson City.				
[ <i>State Library of Nevada.</i> ]	18,000	[i]	D	
Paradise.				
Paradise Public School Library.			X	
Reno.				
Reno Library Association.			X	
[School of Agriculture of the Nevada State University.]				
[State University of Nevada.]	1,000	[i]	D	
VIRGINIA CITY.				
Miners' Union Library of Virginia City.	4,000		D	
Wadsworth.				
Nevada Engineers and Mechanics' Library.			X	
NEW HAMPSHIRE.				
Claremont.				
Fiske Free Library.	4,857	[i]	X	
CONCORD.				
<i>Concord Public Library.</i>	11,000		X	
[ <i>New Hampshire Historical Society.</i> ]	10,300	[iii]		
[ <i>New Hampshire State Library.</i> ]	20,000	[iii]	D	
DOVER.				
Dover Public Library.	7,153		R	



Newton.				
Dennis Library.	6,445	[ii]		D
ORANGE.				
New England Society of Orange.	705			
Passaic.				
Passaic Free Public Library.				X
PATERSON.				
[Paterson Normal Training School.]	1,200			
Paterson Free Public Library.	7,000	[ii]		D
Princeton.				
[ <i>College of New Jersey.</i> ]	60,000	[iii]		D
E. M. Museum of Geology and Archæology of the College of New Jersey.			[ii]	
<i>Theological Seminary of the Presbyterian Church.</i>	48,000	[iii]		
Rahway.				
Rahway Library Association.	9,043	[ii]		
Salem.				
Salem Library Company.	9,000	[i]		D
TRENTON.				
[New Jersey State Normal School.]	500	[ii]		
[ <i>State Library of New Jersey.</i> ]	31,000	[iii]		D
Vineland.				
[College of the Sacred Heart.]	5,000			
Vineland Public Library.	1,500			X
NEW MEXICO.				
Las Cruces.				
[ <i>Agricultural College of New Mexico.</i> ]				
Las Vegas.				
Las Vegas College.	3,500			X
Santa Fé.				
[ <i>Historical Society of New Mexico.</i> ]			[i]	
St. Michael's College.	1,300			X
[ <i>Territorial Library of New Mexico.</i> ]	7,570	[i]		D
[ <i>University of New Mexico.</i> ]	300	[ii]		
NEW YORK.				
ALBANY.				
Albany Catholic Union.				X
New York State Agricultural Society.			[iii]	
<i>New York State Library.</i> (See New York State Library.)	37,300			D
[ <i>New York State Library.</i> ]	128,871	[iii]		D
New York State Museum of Natural History.	1,000	[iii]		
[ <i>New York State Normal School.</i> ]	5,000	[iii]		X
[ <i>Teachers' Training Class of Albany.</i> ]				
<i>Young Men's Association.</i>	17,000			
Albion.				
Albion Union School.	625	[i]		X
Alfred Centre.				
[ <i>Alfred University.</i> ]	5,000	[ii]		
Allegany.				
[ <i>St. Bonaventure's College and Seminary.</i> ]	6,358	[i]		
Annandale.				
[ <i>St. Stephen's College.</i> ]	5,500	[ii]		
AUBURN.				
Seymour Library Association.	9,439	[ii]		D
<i>Theological Seminary of Auburn.</i>	16,417	[ii]		



Anrora.			
[Wells College.]	2,600	[i]	
Bath.			
Bath Library Association.	5,500	[ii]	D
BINGHAMTON.			
Binghamton Library Association.	3,000		D
Brockport.			
[State Normal and Training School.]	7,000	[i]	X
BROOKLYN.			
Adelphi Academy.	1,816	[i]	X
[Brooklyn Collegiate and Polytechnic Institute.]	3,000		X
Brooklyn Institute. (Youths' Free Library.)		[iii]	
<i>Brooklyn Library.</i>	90,000	[iii]	D
[Brooklyn Training School.]			
Columbian Club.	789		X
<i>Eastern District School Library.</i>	17,000		
<i>Long Island Historical Society.</i>	41,000	[iii]	D
Packer Collegiate Institute.	4,929	[ii]	X
Saint Augustine Mechanical Library.			X
Saint Francis's College.]	3,000		
Saint Peter's Library.			X
Young Men's Christian Association.	7,854		D
BUFFALO.			
Buffalo Catholic Institute.	4,000		X
Buffalo Historical Society.	8,237	[i]	
<i>Buffalo Library.</i>	53,000	[iii]	X
Buffalo Mechanics' Institute.	6,000		X
Buffalo Society of National Sciences.	3,300	[iii]	
[Buffalo State Normal and Training School.]			
[ <i>Canisius College.</i> ]	14,500	[ii]	
<i>Grosvenor Library.</i>	31,000	[iii]	D
Canastota.			
Union School and Academy. (District No. 9.)	500		X
Canton.			
[St. Lawrence University.]	9,400	[ii]	D
Catskill.			
Catskill School Library. (District No. 1.)	1,672		X
Cattaraugus.			
Cattaraugus Union Free School.			X
Cazenovia.			
Cazenovia Seminary.	3,000		X
Clinton.			
[ <i>Hamilton College.</i> ]	20,000	[iii]	X
Cobleskill.			
Union School Library.			D
COHOES.			
Cohoes City Library.	2,000		
Corning.			
Corning Library Association.	8,600	[ii]	
Cortland.			
Franklin Hatch Library Association.			X
[State Normal and Training School.]	2,220	[ii]	
Dansville.			
Union School Library.	1,000		X
Ellicottville.			
Ellicottville Union Free School.			X

ELMIRA.			
Young Men's Christian Association.	3,890	[ii]	X
Fordham (see Tremont.)			
Fredonia.			
[State Normal and Training School.]	2,500	[i]	
Geneseo.			
[State Normal and Training School.]	4,000		
<i>Wadsworth Library.</i>	10,000		D
Geneva.			
[ <i>Hobart College.</i> ]	18,000	[iii]	X
Glens Falls.			
Union Free School Library.	796		D
Hamilton.			
[ <i>Madison University.</i> ]	17,821	[iii]	
Havana.			
Cook Academy.	1,200	[iii]	X
Herkimer.			
Union Free School.			X
Hornellsville.			
Hornell Library Association.	7,300	[ii]	X
Hoosick Falls.			
High School Library.			X
Hudson.			
Franklin Library.	4,674		X
Ithaca.			
[ <i>Cornell University.</i> ]	54,840	[iii]	D
[College of Agriculture of Cornell University.]			
<i>Cornell Library.</i>	13,851		X
Jamestown.			
City Public School Library.			D
KINGSTON.			
Kingston Academy.	1,145		X
Lima.			
Genesee Wesleyan Seminary (formerly Genesee College).		[iii]	
LOCKPORT.			
Lockport Union School Library.	4,100		D
LONG ISLAND CITY.			
Fourth Ward School Library. (Astoria P. O.)	600		
Macedon Centre.			
Macedon Academy.	320		X
Malone.			
Mead Library (District School Building).			X
Monticello.			
Monticello Free School Library.			X
NEW BRIGHTON			
Natural Science Association of Staten Island.		[i]	
NEWBURGH.			
<i>Newburgh Free Library.</i>	15,229	[iii]	D
New Palz.			
[State Normal and Training School.]	1,508	[i]	
NEW YORK CITY.			
<i>American Geographical Society.</i>	18,000	[iii]	
<i>American Institute of the City of New York.</i>	13,000	[iii]	
American Institute of Mining Engineers.	2,000	[i]	
American Museum of Natural History.	6,094	[iii]	
American Numismatic and Archaeological Society.	1,000	[i]	

## NEW YORK CITY—Continued.

<i>American Seamen's Friend Society.</i>	38,592		
<i>American Society of Civil Engineers.</i>	16,375	[i]	
<i>Apprentices' Library.</i>	69,537		X
<i>Astor Library.</i>	223,284	[iii]	D
<i>Bar Association of the City of New York.</i>	27,237		
Board of Foreign Missions of the Presbyterian Church.		[iii]	
Central Park Menagerie.		[ii]	
Century Club.	4,536	[1]	
Chamber of Commerce.			D
[ <i>College of the City of New York.</i> ]	23,878	[iii]	D
College of Pharmacy of the City of New York.	3,500	[ii]	
[ <i>College of St. Francis Xavier.</i> ]	22,000	[iii]	
[ <i>Columbia College.</i> ]	93,144	[iii]	D
School of Mines of Columbia College.		[ii]	
<i>Cooper Union for the Advancement of Science and Art.</i>	20,000	[iii]	D
<i>Free Circulating Library and Ottendorfer Branch.</i>	21,624	[i]	X
<i>General Theological Seminary of the Protestant Episcopal Church.</i>	19,000	[iii]	
<i>Grand Lodge Free and Accepted Masons.</i>	10,000		
<i>Harlem Library.</i>	12,000	[i]	D
<i>Harmonic Social Club.</i>	10,000		
<i>Lenox Library.</i>	25,000	[iii]	D
<i>Maimonides Library, L. O. B. B.</i>	26,840	[iii]	
[ <i>Manhattan College.</i> ]	10,000	[i]	
<i>Mercantile Library Association.</i>	210,431	[iii]	D
Metropolitan Museum of Art (Central Park).	1,371	[iii]	
<i>New York Academy of Medicine.</i>	30,000	[ii]	
[ <i>New York Academy of Sciences.</i> ]	8,000	[iii]	
<i>New York Apprentices' Library.</i>	69,537	[iii]	
[ <i>New York Female Normal School.</i> ]			
[ <i>New York Historical Society.</i> ]	75,000	[iii]	D
<i>New York Hospital.</i>	16,000	[i]	
<i>New York Law Institute.</i>	34,000	[i]	
New York Press Club.	2,000		X
<i>New York Society Library.</i>	80,000	[iii]	X
New York Turnverein Bibliothek.	4,860		X
School of Mines. (See Columbia College.)			
<i>Union Theological Seminary.</i>	50,000	[iii]	
University Club Library.	2,907	[i]	X
[ <i>University of the City of New York.</i> ]	10,000	[iii]	
Saint James' Library.			X
Saint Mary's Library.			X
<i>Xavier Union of the City of New York.</i>	13,746	[i]	
<i>Young Men's Christian Association.</i>	33,111	[iii]	D

## Niagara University (see Suspension Bridge).

## OGDENSBURGH.

Ogdensburgh Educational Institute.	7,350		
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## Oneonta.

Union School (District No. 5).	600		X
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## OSWEGO.

Oswego City Library.	8,634	[ii]	
[ <i>Oswego State Normal and Training School.</i> ]	1,475	[i]	X

## Peekskill.

Field Library.			X
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Plattsburgh.				
Railroad Young Men's Christian Association.				X
Potsdam.				
[State Normal and Training School.]				X
POUGHKEEPSIE.				
<i>Poughkeepsie City Library.</i>	14,240	[ii]		D
<i>Vassar College.</i>	15,000	[iii]		X
ROCHESTER.				
<i>Court of Appeals.</i>	12,000			
<i>Public School Central Library.</i>	14,249	[i]		
<i>Reynolds Library.</i>	14,000	[iii]		X
[Teachers' Normal Training Class.]				
<i>Rochester Theological Seminary.</i>	20,590	[iii]		
[ <i>University of Rochester.</i> ]	21,790	[iii]		D
ROME.				
Central New York Institution for Deaf Mutes.				
SCHENECTADY.				
[ <i>Union College.</i> ]	24,038	[iii]		D
Sing Sing.				
<i>Mount Pleasant Military Academy.</i>	12,000			
Skaneateles.				
Skaneateles Library Association.		[i]		X
Springville.				
Griffith Institute.	497	[i]		X
Suspension Bridge.				
De Veaux College.		[iii]		
[Niagara University] (Niagara University P. O.)	9,000	[i]		
SYRACUSE.				
<i>Central Library.</i>	15,889	[iii]		X
<i>Court of Appeals.</i>	10,420			
[Syracuse Training School.]				
[ <i>Syracuse University.</i> ]	10,714	[iii]		D
Tremont.				
[ <i>St. John's College</i> ] (formerly Fordham).	24,800	[iii]		D
TROY.				
Rensselaer Polytechnic Institute.	4,600	[ii]		
Troy Female Seminary.	1,664	[iii]		
Troy High School Library.	691			X
<i>Troy Young Men's Association.</i>	27,210	[iii]		D
UTICA.				
Oneida Historical Society.	1,441	[i]		X
State Lunatic Asylum.	3,500	[iii]		
<i>Utica City Library.</i>	10,479	[ii]		D
WATERTOWN.				
Watertown Public School Library.	5,000			X
West Point.				
<i>United States Military Academy.</i>	30,827	[iii]		
Whitestone.				
Engineer School of Application of United States Army.		[iii]		
YONKERS.				
Yonkers Public Library.	4,600	[i]		
NORTH CAROLINA.				
Chapel Hill.				
Elisha Mitchell Science Society. (University of North Carolina.)		[i]		X
[North Carolina College of Agriculture and Mechanic Arts.]	2,000			
[University of North Carolina.]	8,000	[iii]		D

Charlotte.			
[Biddle University.]	3,120		
Clinton.			
Clinton Female Seminary.			X
Conover.			
Conover College.		[i]	X
Davidson College.			
[Davidson College.]	3,000	[iii]	
Fayetteville.			
Fayetteville Library Association.			D
[Fayetteville State Normal School.]	760		
Goldsborough.			
Goldsborough Graded School.			X
Greensborough.			
Greensborough Graded School.			D
Haysville.			
Haysville High School.			X
Ledger.			
Goodwill Free Library.			X
Lenoir.			
Davenport Female College.		[ii]	
Pioneer Library of North Carolina.	1,100	[i]	D
Mount Airy.			
Mount Airy Library.			X
Mount Pleasant.			
[North Carolina College.]	920		
New Berne.			
[New Berne State Normal School.]			
New Berne Young Men's Christian Association.			X
Plymouth.			
[Plymouth State Colored Normal School.]	125		
Raleigh.			
[North Carolina Agricultural Experiment Station.]		[i]	
[ <i>North Carolina State Library.</i> ]	45,000	[iii]	D
[Shaw University.]	3,000		
Rutherford.			
[Rutherford College.]	4,000		
Salisbury.			
[Salisbury State Colored Normal School.]	800		
Trinity College.			
[Trinity College.]	3,900	[iii]	
Wake Forest.			
[Wake Forest College.]	8,400	[ii]	X
Warrenton.			
Warrenton Female Collegiate Institute.	1,500	[ii]	
Weaverville.			
[Weaverville College.]	113		
WILMINGTON.			
Historical and Scientific Society.		[i]	
Wilson.			
Wilson High School.			X
Winston.			
Winston Graded School Library.	2,500		X

## NORTH DAKOTA.

Bismarek.			
[North Dakota State Library.]			D
Fargo.			
[North Dakota Agricultural College.]			
Grand Forks.			
[University of North Dakota.]	1,000		D

## OHIO.

Ada.			
Ohio Normal University.	4,000		X
AKRON.			
Akron Public Library.	8,000		X
[Buchtel College.]	3,500	[i]	D
Alliance.			
[Mount Union College]. (Mount Union P. O.)	6,000	[i]	D
Ashland.			
[Ashland College.]		[i]	
Athens.			
[Ohio University.]	6,000	[iii]	D
Berea.			
[Baldwin University.]	713		
[German Wallace College.]	3,000		
Bluffton.			
Bluffton Public Library.			X
Brooklyn Village.			
[Calvin College.]			
Bryan.			
Bryan Library.	1,100	[i]	X
Cambridge.			
Cambridge Public School Library.			X
CANTON.			
Canton Public School Library.	1,881		X
Cuyahoga Falls.			
Cuyahoga Falls Public Library.			X
CHILlicothe.			
<i>Chillicothe Public Library.</i>	10,000		D
CINCINNATI.			
<i>Cincinnati Law Library.</i>	10,000		
[Cincinnati Normal School.]	100		
Cincinnati Society of Natural History.	2,800	[iii]	X
[Cincinnati University.]		[iii]	X
Cincinnati Wesleyan College.	1,000	[ii]	
[Historical and Philosophical Society of Ohio.]	9,720	[iii]	
[Industrial and Art School of Ohio Mechanical Institute.]	2,000		
<i>Law Theological Seminary.</i>	13,690	[iii]	X
<i>Public Library of Cincinnati.</i>	142,853	[iii]	D
[Saint Joseph's College.]	3,000		
[ <i>Saint Xavier's College.</i> ]	15,300		
<i>Young Men's Mercantile Library Association.</i>	50,000	[iii]	D
Cireleville.			
Cireleville Public Library.	3,800		X
CLEVELAND.			
[Adelbert College of Western Reserve University.]	9,000		X
<i>Case Library.</i>	20,000	[iii]	D
Case School of Applied Sciences.		[ii]	
Cleveland Law Library.	7,141		X

## CLEVELAND—Continued.

[Cleveland Normal School.]			
<i>Cleveland Public Library.</i>	45,905	[iii]	D
Socialar Turnverein.			X
Western Reserve University.		[iii]	
College Hill.			
[Belmont College.]	1,500	[iii]	X
COLUMBUS.			
[Capital University.]	3,781		
Ohio State Board of Agriculture.	1,500	[iii]	
<i>Ohio State Law Library (Ohio State Library).</i>	18,000		
[ <i>Ohio State Library.</i> ]	53,500	[iii]	D
[Ohio State University.]	5,500	[ii]	
<i>Public Library and Reading Room of the City of Columbus.</i>	18,500	[ii]	D
DAYTON.			
[Dayton Normal School.]	256		
<i>Public Library.</i>	21,232	[iii]	D
Defiance.			
Defiance Library Association.	1,300		X
Delaware.			
[ <i>Ohio Wesleyan University.</i> ]	13,786	[iii]	D
Fremont.			
Birchard Library.	9,000	[ii]	X
Gallipolis.			
Union School Library.	700		X
Gambria.			
[ <i>Kenyon College.</i> ]	20,000	[iii]	D
Geneva.			
[Geneva Normal School.]	100		
Germantown.			
Germantown Public Library.			X
[Twin Valley College.]		[i]	
Granville.			
[Denison University.]	9,000	[iii]	D
HAMILTON.			
Lane Free Library.	4,500		X
Hillsborough.			
Public Library.	5,250	[i]	X
Hiram.			
[Hiram College.]	5,000	[ii]	D
Ironton.			
Briggs Library Institute.	514		X
Lancaster.			
Lancaster Free Library and Reading Room.	3,500		X
Lebanon.			
Mechanics' Institute.	600	[ii]	
National Normal University.	5,000	[i]	X
Lee.			
Wells Library.	1,625	[i]	X
Leipsic.			
Union School.			X
Lima.			
Citizens' Library.	500		X
Mansfield.			
Mansfield Memorial Library.	3,500	[i]	X

Marietta.				
[Marietta College.]	20,130	[iii]	D	
Mount Vernon.				
Mount Vernon Public Library.		[i]	X	
New Concord.				
[Muskingum College.]	500	[i]		
New Lexington.				
New Lexington High School Library.	300		X	
Norwalk.				
Young Men's Library and Reading Room Association.	5,000	[i]	X	
Oberlin.				
[Oberlin College.]	13,819	[iii]	D	
Oxford.				
[Miami University.]	7,000	[iii]	D	
Painesville.				
Lake Erie Female Seminary.	2,500	[ii]		
Temperance Society and Young Men's Christian Association.	2,000		X	
Piqua.				
Piqua High School Library.	600		X	
PORTSMOUTH.				
Portsmouth Public Library.	7,180	[i]	D	
Rio Grande.				
[Rio Grande College.]	570			
SANDUSKY.				
Sandusky Public School Library.			X	
Sciio.				
[Sciio College.]		[i]		
Sciio College Libraries.	1,000		X	
Sidney.				
Sidney Public Library.			D	
SPRINGFIELD.				
Public Library.	12,037	[iii]	D	
[Wittenberg College.]	8,000	[iii]		
STEUBENVILLE.				
Odd Fellows' Library.	3,000	[i]		
Syracuse.				
Carleton College.			X	
Tiffin.				
[Heidelberg College.]	6,000	[iii]	X	
TOLEDO.				
Public Library of Toledo.	23,000	[iii]	D	
Urbana.				
Urbana Library Association.			X	
[Urbana University.]	6,000	[ii]		
Washington.				
Washington Public Library.			X	
Westerville.				
[Otterbein University.]	4,000	[iii]		
Wilberforce.				
[Wilberforce University.]	4,000	[ii]	X	
Wilmington.				
[Wilmington College.]	1,130	[i]		
Wooster.				
[University of Wooster.]	10,300	[iii]	X	



Yellow Springs.				
[Antioch College.]	6,000	[ iii ]		
YOUNGSTOWN.				
Youngstown Young Men's Christian Association.				X
ZANESVILLE.				
Zanesville Athenaeum.	9,000			X
OREGON.				
Ashland.				
[Ashland College and Normal School.]	200			
Astoria.				
[Oregon Pioneer and Historical Society.]				
Corvallis.				
[Corvallis College.]	1,000			
[Oregon State Agricultural College.]				D
Dram.				
[State Normal School.]				X
Eugene City.				
[University of Oregon.]	1,256	[ iii ]		D
Forest Grove.				
[Pacific University and Tualatin Academy.]	5,400	[ iii ]		X
McMinnville.				
[McMinnville College.]	600			X
Monmouth.				
[Christian College.]				
[Oregon State Normal School.]				
Philomath.				
[Philomath College.]	600	[ i ]		
PORTLAND.				
Alpine Club.				X
Bishop Scott Grammar and Divinity School.	1,500	[ ii ]		
<i>Library Association of Portland.</i>	13,436	[ iii ]		D
Odd Fellows' Hall.				X
Roseburgh.				
Roseburgh Academy.				X
Salem.				
[Oregon State Library.]	12,000	[ iii ]		D
[Willamette University.]	3,000			
PENNSYLVANIA.				
ALLEGHENY.				
Lincoln School.				X
Theological Seminary of the United Presbyterian Church.	3,100			X
<i>Public School Library.</i>	10,000	[ i ]		D
Western Pennsylvania Theological Seminary.		[ iii ]		
<i>Western Theological Seminary of the Presbyterian Church.</i>	25,000			
[Western University of Pennsylvania.]	5,000	[ ii ]		
ALLENTOWN.				
Allentown High School Library.				X
[Muhlenberg College.]	3,000			X
ALTOONA.				
Mechanics' Library and Reading Room Association.	6,000			X
Andalusia.				
Kingdale Library.				X
Ansville.				
[Lebanon Valley College.]	2,150	[ i ]		

Beatty.				
[ <i>St. Vincent's Abbey and College.</i> ]	24,000	[i]		
Beaver Falls.				
[Geneva College.]	1,000	[i]		X
Blairsville.				
Blairsville Library Association.				X
Bloomsburg.				
Columbia County Law Library.	710			X
[ <i>Pennsylvania State Normal School of the Sixth District.</i> ]	1,160			
Bryn Mawr.				
[Bryn Mawr College.]	3,000	[ii]		
California.				
[ <i>Southwestern State Normal School.</i> ]	800	[i]		
Carlisle.				
[ <i>Dickinson College.</i> ]	8,485	[iii]		
<i>Belles Lettres Society (Dickinson College).</i>	10,611			
<i>Union Philosophical Society (Dickinson College).</i>	10,681			
Chambersburg.				
Wilson Female College.	2,000			X
CHESTER.				
[ <i>Pennsylvania Military Academy.</i> ]	1,200			
<i>Crozer Theological Seminary.</i>	10,000			
Clarion.				
[ <i>Clarion State Normal School.</i> ]	1,500			
Collegeville.				
[ <i>Ursinus College.</i> ]	6,000	[i]		
Columbia.				
Schock's Library.				X
Curwensville.				
Curwensville Public School Library.				X
Danville.				
Thomas Beaver Library.				X
EASTON.				
Easton Library.	5,700	[ii]		
[ <i>Lafayette College.</i> ]	19,946	[iii]		X
Edinborough.				
[ <i>State Normal School.</i> ]	6,500	[i]		
ERIE.				
Law Library of the City of Erie.				X
Germantown.				
<i>Friends' Free Library and Reading Room.</i>	13,000	[ii]		X
Germantown Library Association.		[ii]		
Workingmen's Club of Germantown.	2,600	[i]		D
Gettysburg.				
[ <i>Pennsylvania College.</i> ]	9,000	[iii]		D
<i>Theological Seminary of the General Synod of the Evangelical Lutheran Church.</i>	12,000	[iii]		
Greenville.				
[ <i>Thiel College.</i> ]	5,000	[i]		
Grove City.				
[Grove City College.]	2,000			
HARRISBURG.				
[ <i>Pennsylvania State Library.</i> ]	60,000	[iii]		D
Young Men's Christian Association.	2,350			D
Hatborough.				
<i>Union Library.</i>	10,164	[i]		

Haverford.			
[ <i>Haverford College.</i> ]	15,530	[iii]	
Hazleton.			
Young Men's Christian Association.	1,000		X
Honesdale.			
Honesdale School Library.	7,298	[ii]	D
Huntingdon.			
Normal College.	1,524	[i]	D
Indiana.			
[State Normal School.]	1,300		
Jefferson.			
[Monongahela College.]	310	[i]	
Jenkintown.			
Friends' Library, of Abington.	400		X
Jersey Shore.			
<i>Eclectic Institute.</i>	10,000		
Johnstown.			
Cambria Library Association.	6,029		D
Kutztown.			
[Keystone State Normal School.]	1,843	[i]	D
LANCASTER.			
[Franklin and Marshall College.]	3,556	[iii]	X
<i>Theological Seminary (German Reformed).</i>	10,000		
Young Men's Christian Association of Lancaster.	5,763		D
Lewisburg.			
[ <i>Bucknell University.</i> ]	12,000	[iii]	
Lincoln University.			
[Lincoln University.]	9,000	[iii]	
Lock Haven.			
[Central State Normal School.]	850	[i]	D
Mansfield.			
[Pennsylvania State Normal School.]	4,500	[ii]	D
Mauck Chunk.			
Dinwiddie Memorial Library.			D
Meadville.			
[ <i>Allegheny College.</i> ]	12,000	[iii]	D
Library, Art and Historical Association.	4,000	[ii]	X
<i>Meadville Theological School.</i>	18,000	[iii]	
Media.			
Delaware County Institute of Science.	2,500	[iii]	
Millersville.			
[Pennsylvania State Normal School of Second District.]	2,000	[i]	
Minersville.			
Minersville Lyceum.			X
Montrose.			
Montrose School Library.			X
New Castle.			
Young Men's Christian Association.			D
New Wilmington.			
[Westminster College.]	4,500	[iii]	
NORRISTOWN.			
Norristown Library Company	8,000		D
Overbrook.			
<i>Theological Seminary of St. Charles Borromeo.</i>	16,500	[iii]	

Patterson.			
Melford Grange.			X
PHILADELPHIA.			
[ <i>Academy of Natural Sciences.</i> ]	40,000	[iii]	
American Baptist Historical Society.	7,100		
American Baptist Publication Society.	3,000	[iii]	
[ <i>American Philosophical Society.</i> ]	50,000	[iii]	
<i>American Sunday School Union (Editorial Library).</i>	10,000		
<i>Apprentices' Library Company.</i>	18,000	[iii]	
<i>Athenæum of Philadelphia.</i>	25,000	[iii]	X
[Central High School.]		[ii]	
<i>College of Physicians of Philadelphia.</i>	37,048	[i]	
<i>Franklin Institute.</i>	24,240	[iii]	D
George Institute.	5,000		X
<i>German Society of Pennsylvania.</i>	22,000	[iii]	X
Girard College for Orphans.	8,512	[iii]	
[ <i>Historical Society of Pennsylvania.</i> ]	28,162	[iii]	D
Home for F. and A. Masons (Masonic Temple).		[ii]	
[La Salle College.]	4,000	[i]	
Library Association of Friends.	9,951	[iii]	
<i>Library Company of Philadelphia.</i>	150,000	[iii]	D
<i>Mercantile Library School of Philadelphia.</i>	152,000	[iii]	D
<i>Mutual Library Company of Philadelphia.</i>	43,400		
<i>Odd Fellows' Library.</i>	12,000		
<i>Pennsylvania Hospital.</i>	15,000	[iii]	
Philadelphia Club.	2,000	[i]	X
Philadelphia College of Pharmacy.	4,000	[iii]	
<i>Philadelphia Law Association.</i>	19,112		
[Philadelphia Normal School for Girls.]	1,600		
Presbyterian Board of Publication.	3,000	[iii]	
<i>Presbyterian Historical Society.</i>	20,000	[i]	
Southwark Library.	9,746	[iii]	
<i>Spring Garden Institute.</i>	13,000		
<i>Theological Seminary (Evangelical Lutheran).</i>	17,000		
[ <i>University of Pennsylvania.</i> ]	28,000	[iii]	D
Wagner Free Institute of Science.	6,000	[iii]	D
West Philadelphia Institute.	6,000		X
Young Men's Christian Association.	5,600	[ii]	
Zoological Society of Philadelphia.	300	[i]	
PITTSBURGH.			
<i>Allegheny County Law Library.</i>	15,000		
<i>Bishop Bowman Institute.</i>	15,000		
[Catholic College of the Holy Ghost.]	3,000		
Iron City Microscopical Society.			X
Pennsylvania Female College.		[ii]	
Pittsburgh Female College.	1,100	[ii]	
<i>Pittsburgh Library Association.</i>	19,000	[iii]	D
POTTSVILLE.			
Law Library of Schuylkill County.	2,702		D
Pottsville Athenæum.	3,500		X
READING.			
Reading Library.	7,000	[iii]	X
SCRANTON.			
Lackawanna Institute.	1,800	[ii]	X
SEWICKLEY.			
Sewickley Public Library.	2,500	[i]	X

Sharon.			
Sharon Public School Library.	867		X
SHENANDOAH.			
Shenandoah High School.			
Shippensburg.			
[Cumberland Valley State Normal School.]	325		
Somerset.			
Somerset County Law Library.	500		X
South Bethlehem.			
[ <i>Lehigh University.</i> ]	61,000	[iii]	D
State College.			
[Pennsylvania State College.]	3,500	[ii]	D
Swarthmore.			
[Swarthmore College.]	7,415	[iii]	
Tunkhannock.			
Tunkhannock School Library.			X
Van Dyke.			
Center Library Society.			X
Villa Nova.			
[Villa Nova College.]			
Warren.			
Warren Library Association.	4,800		
Washington.			
[Washington and Jefferson College.]	5,200	[iii]	
Waynesburg.			
Waynesburg College.	2,000	[i]	D
West Chester.			
Chester County Law and Miscellaneous Library.	1,940		D
[State Normal School.]	3,600	[iii]	
West Chester Library Association.	2,050		X
West Grove.			
West Grove Free Library.	1,100		X
WILKES BARRE.			
Ely Post, Grand Army of the Republic.			X
Wyoming Historical and Geological Society.	5,200	[iii]	D
Wilkesburg.			
WILLIAMSPORT.			
Dickinson Seminary.	2,500	[i]	X
Williamsport School District Library.	1,263		X
YORK.			
United Library Association of York.	3,600	[i]	
RHODE ISLAND.			
Bristol.			
Rogers Free Library.	8,432		X
East Greenwich.			
East Greenwich Academy.	2,500		D
Kingston.			
[Rhode Island State Agricultural School.]			
LINCOLN. (No public library.)			
NEWPORT.			
Naval Institute.		[ii]	
<i>People's Library.</i>	25,650		X
<i>Redwood Library and Athenaeum.</i>	31,700	[iii]	D
PAWTUCKET.			
Pawtucket Free Public Library.	9,313	[i]	X

## PROVIDENCE.

[ <i>Brown University.</i> ]	62,800	[iii]	D
Franklin Lyceum.	9,000		D
Friends' Boarding School.	6,300	[ii]	
<i>Providence Athenæum.</i>	44,582	[iii]	
<i>Providence Public Library.</i>	33,047	[ii]	X
Public School Library.	2,200		X
[ <i>Rhode Island Historical Society.</i> ]	16,000	[iii]	
[ <i>Rhode Island State Library.</i> ]	12,000		D
[ <i>Rhode Island State Normal School.</i> ]	1,200	[ii]	

## WARWICK.

Crompton Free Library. 3,091

## Westerly.

Pawcatuck Library. 4,000 [i] X

## WOONSOCKET.

Harris Institute Library. 9,166 [ii] X

## SOUTH CAROLINA.

## Aiken.

Aiken Library. [i] D

## CHARLESTON.

Charleston High School. X

*Charleston Library Society.* 19,000 [iii] D

Citadel Academy. X

[*College of Charleston.*] 10,000 [iii] D

[*South Carolina Historical Society.*] [i]

Medical College of the State of South Carolina. 4,000 [iii]

South Carolina Military Academy. X

Young Men's Christian Association. 840 X

## Cheraw.

Cheraw Lyceum. 1,000 X

## Clinton.

Thornwell Orphanage. 1,816 [i] X

## COLUMBIA.

[*Allen University.*]

[*College of Agricultural and Mechanical Arts of the University of South Carolina.*]

[*South Carolina College.*] 27,000

[*South Carolina State Library.*] 36,000 [iii] D

[*Presbyterian Theological Seminary.*] 22,000 [i] X

[*University of South Carolina.*] 27,000 [iii] D

[*Winthrop Training School for Teachers.*] 50

## Due West.

[*Erskine College.*] 1,500 [ii]

## Edgefield Court House.

Edgefield Public Library. X

## Florence.

Florence Library Association. 2,000 D

## Gaffney City.

Cooper Limestone Institute. X

## Greenville.

[*Furman University.*] 2,500 [iii]

## Marion.

Young Men's Club. X

## Newberry.

[*Newberry College.*] 6,000 [i] X

Oats.			
Oats Library.			X
Orangeburg.			
[Clatlin University and College of Agriculture.]	1,500	[i]	
Spartanburg.			
[Wofford College.]	6,000		D
Walhalla.			
[Adger College.]			
Wahalla Female College.	300		X
Yorkville.			
King's Mountain Military Institute.	800		X

## SOUTH DAKOTA.

Brookings.			
[South Dakota Agricultural College.]	500	[i]	D
East Pierre. (See Pierre.)			
Madison.			
[South Dakota Normal School.]	650		
Pierre.			
[Pierre University.] (East Pierre P. O.)	1,200	[ii]	D
[South Dakota State Library.]			D
Rapid City.			
[South Dakota School of Mines.]			
Spearfish.			
[State Normal School.]	2,600		D
Vermillion.			
[University of South Dakota.]	2,000	[ii]	D

## TENNESSEE.

Athens.			
[Grant Memorial University.]	2,250		
Bellbuckle.			
Webb School.			X
Bristol.			
[King College.]	756		
Brownsville.			
Brownsville Female College.			X
CHATTANOOGA.			
Chattanooga Public Library.			X
[Chattanooga University.]	644		
Chucky City.			
Warren College.			X
Clarksville.			
[Southwestern Presbyterian University.]	3,500	[i]	X
Columbia.			
Columbia Athenæum.	5,000	[ii]	X
Columbia Institute.			X
Hiwassee College.			
[Hiwassee College.]	2,300	[ii]	X
Jackson.			
Jackson Free Public Library.	1,100		X
[Southwestern Baptist University.]	3,000	[ii]	D
Knoxville.			
Public Library of Knoxville.	3,729	[i]	X
[University of Tennessee.]	7,000	[iii]	D

Lebanon.				
[ <i>Cumberland University.</i> ]	10,000	[iii]		D
Lewisburg.				
Lewisburg Institute Library.	1,000	[i]		D
Maryville.				
[Maryville College.]	6,000	[iii]		
McKenzie.				
[Bethel College.]	700			X
McMinnville.				
McMinnville Library Association.	1,500	[i]		D
MEMPHIS.				
Bar and Law Library Association.	6,630			X
[Christian Brothers' College.]	3,500	[ii]		X
Cossett Library.				X
Cotton Exchange.				D
Young Men's Hebrew Library.				X
Milligan.				
[Milligan College.]	400			X
Mossy Creek.				
[Carson College.]	320			
NASHVILLE.				
[Central Tennessee College.]	2,150	[i]		
[Fisk University.]	3,125			
[Roger Williams University.]	3,000			
[State Normal College, University of Nashville.]	500	[iii]		X
[Tennessee Historical Society.]		[i]		
[Tennessee State Library.]	30,000	[ii]		D
[Vanderbilt University.]	10,000	[iii]		D
Watkins Institute.				D
Pulaski.				
Martin College.				D
Ripley.				
Wesleyan Methodist Academy.				X
Rugby.				
Hughes' Free Public Library.	6,195	[ii]		X
Sewanee.				
[ <i>University of the South.</i> ]	16,000	[iii]		D
Tusculum.				
[Greeneville and Tusculum College.]	5,820	[ii]		D
Union City.				
Union City College.				D
Winchester.				
Winchester Normal School.				X
TEXAS.				
Athens.				
Athens Public School Library.				X
AUSTIN.				
Austin Public Library.				X
[Texas State Library.]		[iii]		D
[University of Texas.]	5,000	[iii]		D
Belton.				
Baylor Female College.	1,000			X



Bonham.				
Carlton Library.				X
Cisco.				
Cisco Public School Library.				X
College Station.				
[ <i>Agricultural and Mechanical College of Texas.</i> ]	2,051	[ii]		D
DALLAS.				
Public Library and Reading Room.	800			D
Fairfield.				
Fairfield Public School Library.				X
Fort Worth.				
Commercial Exchange Library.				X
GALVESTON.				
Free Public Library.	5,600	[1]		D
St. Mary's University.	500			X
Georgetown.				
[ <i>Southwestern University.</i> ]	1,000	[1]		X
Hempstead.				
[ <i>Prairie View Normal Institute.</i> ]	375			
Hillsboro.				
Hillsboro Public Library.				X
HOUSTON.				
Houston Lyceum Library.	2,500			D
Huntsville.				
[ <i>Sam Houston Normal Institute.</i> ]	3,500			X
Italy.				
[ <i>Hope Institute.</i> ]	100			
Mansfield.				
[ <i>Mansfield Male and Female College.</i> ]				
Palestine.				
[ <i>Academy of Science of Texas.</i> ]			[1]	
Public Library Association of Palestine.				D
Prairie Lea.				
The Grange Library.	395			D
Salado.				
[ <i>Salado College.</i> ]				
SAN ANTONIO.				
San Antonio Literary and Scientific Association.	3,000			
Savoy.				
Platonian Literary Society.				D
Sherman.				
[ <i>Austin College.</i> ]	3,000	[1]		
Sulphur Springs.				
Central College.	400			X
Tehuacana.				
[ <i>Trinity University.</i> ]	1,000	[1]		X
Terrell.				
Terrell Public Library.				X
Waco.				
[ <i>Baylor University.</i> ]	3,500			D
Waxahachie.				
Marvin College.	800			D
Weatherford.				
High School Library.				D

## UTAH TERRITORY.

## Logan City.

[Utah Agricultural College.]

## SALT LAKE CITY.

[Utah Territorial Library.]

[iii] D

[University of Deseret.]

3,621 [iii] X

## VERMONT.

## Bellows Falls.

Bellows Falls Lyceum.

X

## BURLINGTON.

*Fletcher Free Library.*

18,600 [iii] D

*University of Vermont and State Agricultural College.*

35,000 [iii] D

Vermont Episcopal Institute.

4,000 [i] X

## Castleton.

[Castleton State Normal School.]

[iii]

## Johnson.

[Johnson State Normal School.]

900 [i]

## Lunenburg.

*Cutting's Public Library and Museum.*

14,000 [i]

## Middlebury.

[Middlebury College.]

1,600 [iii] D

## Montpelier.

[State Cabinet of Natural History.] (Merged with State Library.)

[Vermont Historical Society.]

[iii]

[Vermont State Library.]

18,600 [iii] D

## Randolph.

[State Normal School.]

1,000 [i]

## Richmond.

Richmond Lyceum.

X

## RUTLAND.

Rutland High School.

## St. Johnsbury.

*St. Johnsbury Athenæum.*

12,000 [iii] D

## Strafford.

Harris Library (Public Library).

2,062 [ii]

*Vergennes Library.*

22,220

## Windsor.

Windsor Library Association.

4,480 [i] X

## Woodstock.

Normal Williams Public Library.

4,400 X

## VIRGINIA.

## ALEXANDRIA.

Alexandria Library.

5,000

## Ashland.

[*Randolph Macon College.*]

10,000 [iii]

## Blacksburg.

[Virginia Agricultural and Mechanical College.]

1,200 [ii]

## Charlottesville.

[*University of Virginia.*]

47,000 [iii] D

## Emory.

[Emory and Henry College.]

4,580 [iii] D

## Farmville.

[State Normal School of Virginia.]

500 X

Fortress Monroe.				
United States Artillery School.	5,900	[i]	X	
Hampden-Sidney.				
[Hampden-Sidney College.]	2,200	[iii]		
<i>Union Theological Seminary.</i>	12,400			
Hampton.				
[Hampton Normal and Agricultural Institute.]	3,500	[i]		
Jonesville.				
Jonesville Town Library.				X
Lexington.				
[Virginia Military Institute.]	8,800	[iii]	D	
[ <i>Washington and Lee University.</i> ]	18,000	[iii]	X	
LYNCHBURG.				
Young Men's Christian Association.	450			X
Newmarket.				
Polytechnic Institute.	500	[ii]		
Norfolk.				
Norfolk Library Association.				D
Young Men's Christian Association.				X
PETERSBURG.				
[Virginia Normal and Collegiate Institute.]	625	[i]	D	
Young Men's Christian Association.	2,000			X
PORTSMOUTH. (No public library.)				
RICHMOND.				
Richmond Academy of Science.				
[Richmond College.]	8,000	[iii]	X	
Richmond Mechanics' Institute.	3,200			X
[ <i>Virginia Historical Society.</i> ]	13,883	[iii]	D	
[ <i>Virginia State Library.</i> ]	45,000	[iii]	D	
Young Men's Christian Association.	3,300	[i]	D	
Roanoke City.				
Young Men's Christian Association of Roanoke.				X
Salem.				
[ <i>Roanoke College.</i> ]	16,000	[iii]	D	
Stamton.				
Young Men's Christian Association.	1,426	[i]	X	
Theological Seminary.				
<i>Protestant Episcopal Theological Seminary.</i>	12,000	[iii]		
University of Virginia (see Charlottesville.)				
Wytheville.				
Wytheville Library Association.	600			X
WASHINGTON.				
Olympia.				
[State Library.]	1,200	[i]	D	
Seattle.				
[University of Washington.]	2,260	[ii]		
Tacoma.				
[Washington College.]		[ii]		
Walla Walla.				
[Whitman College and Seminary.]	1,976	[ii]		
WEST VIRGINIA.				
Bethany College.				
[Bethany College.]	2,000	[iii]	X	
Buchanan.				
Buchanan Academy Library.				X

Charleston.				
[State Library.]	6,000	[iii]		D
Clarksburg.				
Clarksburg Academy.				X
Concord.				
Concord Normal School.				X
Fairmont.				
[Fairmont State Normal School.]	800			D
Farmington.				
Farmington High School.				X
Flemington.				
[West Virginia College.]	200	[ii]		
Glenville.				
[Glenville State Normal School.]	950			D
Harper's Ferry.				
[Storer College.]	3,500			
Huntington.				
[Marshall College State Normal School.]	700	[i]		X
Martinsburg.				
Grammar School Library.				X
Morgantown.				
[West Virginia Historical Society.]	500			
[West Virginia University.]	8,000	[iii]		D
Romney.				
Literary Society of Romney.	2,000			X
West Virginia Institute for the Deaf, Dumb, and Blind.	734	[i]		X
Shepherdstown.				
[Shepherd College State Normal School.]	300	[ii]		X
West Liberty.				
[West Liberty State Normal School.]	350			
WHEELING.				
Wheeling Public Library.	8,500	[i]		D

## WISCONSIN.

Appleton.				
[Lawrence University.]	10,740	[iii]		D
Ashland.				
Vaugh Library.				X
Beloit.				
[Beloit College.]	12,840	[iii]		D
EAU CLAIRE.				
Eau Claire Free Library.	3,000			X
FOND DU LAC.				
Free Library of Fond du Lac.	7,500			D
Galesville.				
[Galesville University.]	3,000	[iii]		D
Green Bay.				
Green Bay Business Men's Association.				X
LA CROSSE.				
Public Library of La Crosse.				D
MADISON.				
[College of Agriculture of the University of Wisconsin.]				
[State Historical Society of Wisconsin.]	116,750	[iii]		D
[State Library of Wisconsin.]	18,954			D
[University of Wisconsin.]	14,436	[iii]		X
[Wisconsin Society of Science, Art, and Letters.]				

Marinette.			
Marinette Library.			X
MILWAUKEE.			
<i>Milwaukee Public Library.</i>	34,687	[iii]	D
Public School Libraries (6).	4,137		X
Public Museum of the City of Milwaukee.	788	[i]	X
[ <i>Seminary of Saint Francis of Sales.</i> ]	11,000		
Wisconsin Natural History Society.		[i]	
[ <i>Wisconsin Normal School.</i> ]	720		
Milton.			
[ <i>Milton College.</i> ]	3,316		X
Nashotah.			
<i>Nashotah Theological Seminary.</i>	10,500		X
Neenah.			
Neenah High School.			X
OSHKOSH.			
Oshkosh High School Library.			X
[ <i>Oshkosh State Normal School.</i> ]	1,600	[i]	
Platteville.			
[ <i>Wisconsin State Normal School.</i> ]	700	[iii]	
Portage.			
Portage High School.			X
Prairie du Chien.			
College of the Sacred Heart.	4,000		D
RACINE.			
[ <i>Racine College.</i> ]	8,200	[iii]	D
Ripon.			
[ <i>Ripon College.</i> ]	5,800	[i]	X
River Falls.			
[ <i>State Normal School.</i> ]	1,498	[i]	X
Saint Francis (see Milwaukee.)			
Sheboygan.			
Business Men's Association.	1,205		X
Watertown.			
[ <i>Northwestern University.</i> ]	3,200	[i]	
Waukesha.			
Waukesha Free Library.			X
Waupun.			
Waupun Library Association.	4,000	[i]	X
Whitewater.			
[ <i>State Normal School.</i> ]	1,586	[i]	X

## WYOMING.

Cheyenne.			
[ <i>State Library.</i> ]	10,000	[ii]	D
[ <i>Wyoming Academy of Art, Science, and Letters.</i> ]		[i]	
Laramie City.			
[ <i>University of Wyoming.</i> ]		[iii]	X

### III.—LIST OF FOREIGN LIBRARIES TO WHICH IT IS DESIRED TO SEND FUTURE PUBLICATIONS OF THE NATIONAL MUSEUM.

[As in the preceding lists, [i] indicates that the library receives regularly the *Smithsonian Report*; [ii] that it receives the *Report* and the *Smithsonian Miscellaneous Collections*; [iii] that it receives the two preceding and the *Smithsonian Contributions to Knowledge*.]

NOTE.—This list is not intended to indicate the distribution of Smithsonian publications, but shows incidentally what publications of the Institution are sent to the libraries mentioned.

#### AFRICA.

Société Algérienne de Climatologie, Sciences Physiques et Naturelles.	Algiers, Algeria.	[i]
South African Museum.	Cape Town, Cape of Good Hope.	[i]
South African Philosophical Society.	Cape Town, Cape of Good Hope.	[i]
Musée de Boulaq.	Cairo, Egypt.	[i]
Société d'Histoire Naturelle.	Port Louis, Mauritius.	

#### AMERICA (NORTH).

Le Naturaliste Canadien.	Cape Rouge, Quebec.	[i]
McGill University.	Montreal, Quebec.	[iii]
Natural History Society.	Montreal, Quebec.	[i]
Geological and Natural History Survey of Canada.	Ottawa, Ontario.	[iii]
Royal Society of Canada.	Ottawa, Ontario.	[i]
Université Laval.	Quebec, Quebec.	[iii]
Canadian Institute.	Toronto, Ontario.	[iii]
Natural History Society of Toronto.	Toronto, Ontario.	[i]
Provincial Museum.	Victoria, British Columbia.	
Manitoba Historical and Scientific Society.	Winnipeg, Manitoba.	[iii]
University of New Brunswick.	Fredericton, New Brunswick.	[iii]
Natural History Society.	St. John's, New Brunswick.	[i]
Geological Survey of Newfoundland.	St. John's, Newfoundland.	[i]
Nova Scotia Institute of Natural Sciences.	Halifax, Nova Scotia.	[i]
Museo Nacional.	San José, Costa Rica.	
Museo de Historia Natural.	Guatemala, Guatemala.	
Museo Nacional.	San Salvador, San Salvador.	
El Museo Nacional.	Mexico, Mexico.	[iii]
Mexican Geographical Exploring Expedition.	Mexico, Mexico.	
Sociedad Mexicana de Historia Natural.	Mexico, Mexico.	[iii]
Bermuda Library.	Hamilton, Bermudas, West Indies.	[i]
Real Universidad de la Habana.	Habana, Cuba.	[i]
Musée l'Herminier.	Point-à-Pitre, Guadeloupe.	[i]
Public Museum.	Kingston, Jamaica.	

#### AMERICA (SOUTH).

Museo Público de Buenos Ayres.	Buenos Ayres, Argentine Republic.	[iii]
Sociedad Zoológica Argentina.	Buenos Ayres, Argentine Republic.	
Academia Nacional de Ciencias Exactas.	Corboba, Argentine Republic.	[i]
Museo Nacional.	Rio Janeiro, Brazil.	[i]
Public Museum.	Georgetown, British Guiana.	
Museo Nacional.	Santiago, Chile.	[i]
Sociedad de Historia Natural.	Santiago, Chile.	
National Library.	Bogota, Colombia.	[iii]
Museo Nacional.	Bogota, Colombia.	
National Library.	Lima, Peru.	[iii]
Academia de Ciencias Naturales.	Lima, Peru.	
Museo Nacional.	Caracas, Venezuela.	

## ASIA.

Royal Asiatic Society (China branch). (Care James Bairn, Haymarket, London, England.)	Shanghai, China.	[iii]
Bombay Natural History Society.	Bombay, India.	[i]
Government Central Museum (now Victoria and Albert Museum).	Bombay, India.	[i]
Asiatic Society of Bengal.	Calcutta, India.	[iii]
Geological Survey of India.	Calcutta, India.	[iii]
Indian Museum.	Calcutta, India.	[i]
Municipal Library and Museum.	Kurrachee, India.	[i]
Government Central Museum and Library.	Madras, India.	[i]
Trevandrum Museum.	Trevandrum, India.	
Museum of Natural History.	Hakodadi, Japan.	
Asiatic Society of Japan (formerly in Yokohama).	Tokio, Japan.	[i]
Deutsche Gesellschaft für Natur- und Völkerkunde Ost-Asiens.	Tokio, Japan.	[i]
Mombusho Museum.	Tokio, Japan.	[iii]
Tokio Daigaku (formerly Kūisei Gakko).	Tokio, Japan.	[iii]
Koninklijke Naturkundige Vereeniging in Nederlandsch-Indië.	Batavia, Java.	[iii]
Raffles Library and Museum.	Singapore, Straits Settlements.	[i]
Perak Government Museum.	Perak, Straits Settlements.	

## AUSTRALASIA.

## AUSTRALIA.

Australian Museum.	Sydney, New South Wales.	[i]
Linnean Society of New South Wales.	Sydney, New South Wales.	[i]
Natural History Society.	Sydney, New South Wales.	
Queensland Museum of Natural History.	Queensland, Australia.	
Royal Society of South Australia.	Adelaide, South Australia.	[i]
Royal Society of Tasmania. (Packages sent through G. W. Wheatly & Co., 165 Leadenhall street, London, E. C.)	Hobarton, Tasmania.	[iii]
Melbourne Museum.	Melbourne, Victoria.	
National Museum of Victoria.	Melbourne, Victoria.	[i]
Natural History Society.	Melbourne, Victoria.	[i]
Public Library, Museum, and National Gallery.	Melbourne, Victoria.	[iii]
Zoological and Acclimatization Society.	Melbourne, Victoria.	[i]

## NEW ZEALAND.

Auckland Museum.	Auckland, New Zealand.	
Canterbury Museum.	Christchurch, New Zealand.	[i]
Otago Museum.	Dunedin, New Zealand.	[i]
Colonial Museum and Geological Survey Department.	Wellington, New Zealand.	[i]
New Zealand Institute.	Wellington, New Zealand.	[ii]

## POLYNESIA.

Department of Foreign Affairs.	Honolulu, Sandwich Islands.	[i]
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## EUROPE.

## AUSTRIA-HUNGARY.

National Museum.	Agram (Zagreb), Croatia.	[i]
Vorarlberger Museums-Verein.	Bregenz, Austria.	[i]

Naturforschender Verein.	Brünn, Austria.	[iii]
K. Magyar Tudományos Egylet.	Budapest, Hungary.	[iii]
K. Magyar Természettudományi Társulat.	Budapest, Hungary.	[iii]
Magyar Nemzeti Museum.	Budapest, Hungary.	[i]
Musée d'Anthropologie de l'Université.	Budapest, Hungary.	
Naturforschender Verein.	Budapest, Hungary.	
Zoologisch-Zootomisches Institut.	Gratz, Styria.	
Edelyi Museum Egylet.	Klausenburg, Transylvania.	[i]
Akademija Umiejetności.	Krakau, Galicia.	[i]
Landes-Museum.	Laibach, Illyria.	[i]
Museum Francisco Carolinum.	Linz, Austria.	[i]
Comité für naturwissenschaftliche Landesdurchforschung.	Prag, Austria.	[i]
K. böhmisches Museum.	Prag, Bohemia.	[iii]
Verein für Natur- und Heilkunde.	Presburg, Hungary.	[i]
Verein der Naturfreunde.	Reichenberg, Bohemia.	
Städtisches Museum Carolino-Augustinum.	Salzburg, Austria.	[i]
Civico Museo di Storia Naturale Ferdinando-Massimiliano.		
	Trieste, Illyria.	[i]
Anthropologische Gesellschaft.	Wien, Austria.	[i]
Kaiserliche Akademie der Wissenschaften (Universitäts-Platz 2).		
	Wien, Austria.	[iii]
K. K. Botanisches Hof-Cabinet.	Wien, Austria.	
K. K. Naturhistorisches Hof-Museum.	Wien, Austria.	[ii]
K. K. Oesterr. Museum für Kunst und Industrie.	Wien, Austria.	[i]
K. K. Zoologisch-Botanische Gesellschaft.	Wien, Austria.	[ii]
K. K. Zoologisches Hof-Cabinet.	Wien, Austria.	
K. K. Handels Museum.	Wien, Austria.	[i]

## BELGIUM.

Société Royale de Zoologie.	Anvers (Belgium).	
Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique.		
	Bruxelles (Belgium).	[iii]
Musée Royal d'Histoire Naturelle de Belgique.	Bruxelles (Belgium).	[ii]
Société Entomologique de Belgique.	Bruxelles (Belgium).	[ii]
Société des Naturalistes Dinantais.	Dinant, Belgium.	
Société d'Histoire Naturelle.	Gand (Belgium).	
Muséum Commercial et Industriel.	Melle, near Ghent (Belgium).	

## DENMARK.

Kongelige Danske Videnskabernes Selskab.	Kjöbenhavn (Denmark).	[iii]
Kongelige Danske Selskab for Fædrelandets Historie og Sprog.		
	Kjöbenhavn (Denmark).	
Naturhistoriske Forening.	Kjöbenhavn (Denmark).	[i]
Universitets Bibliotheket.	Kjöbenhavn (Denmark).	[i]
Universitets Zoologiske Museum.	Kjöbenhavn (Denmark).	[i]

## FRANCE.

Muséum d'Histoire Naturelle.	Bordeaux, France.	[i]
Société Linnéenne de Bordeaux.	Bordeaux, France.	[iii]
Société Linnéenne de Normandie.	Caen, France.	[iii]
Musée d'Histoire Naturelle.	Caen, France.	[i]
Société d'Histoire Naturelle de Savoie.	Chambéry, France.	
Société Nationale des Sciences Naturelles et Mathématiques de Cherbourg.		
	Cherbourg, France.	[iii]



Musée d'Histoire Naturelle.	Douai (Nord), France.	[1]
Musée d'Histoire Naturelle.	Laval, France.	
Musée d'Histoire Naturelle.	Lille, France.	[1]
Société des Sciences, de l'Agriculture et des Arts.	Lille, France.	[iii]
Musée d'Histoire Naturelle de Lyon.	Lyon, France.	[1]
Société d'Agriculture, Histoire Naturelle et Arts Utiles de Lyon.	Lyon, France.	[iii]
Muséum d'Histoire Naturelle.	Marseilles, France.	[1]
Société d'Horticulture et d'Histoire Naturelle de l'Hérault.	Montpellier, France.	[1]
Société de la Loire inferieure.	Nantes, France.	[1]
Bibliothèque Nationale	Paris, France.	[iii]
Académie des Sciences.	Paris, France.	[1]
"La Nature" (120 Boulevard St. Germain).	Paris, France.	
L'Anthropologie.	Paris, France.	
Musée Guimet, Ministère de l'Instruction, etc.	Paris, France.	[1]
Musée d'Ethnographie (Troadero).	Paris, France.	
Musée d'Histoire Naturelle.	Paris, France.	[1]
Musée du Louvre.	Paris, France.	
Société d'Acclimatation (11 rue de Lille).	Paris, France.	[1]
Société Entomologique de France (à la Mairie du VI <sup>e</sup> Arrondissement).	Paris, France.	[1]
Société Zoologique de France.	Paris, France.	[1]
Musée d'Histoire Naturelle de Rheims.	Rheims, France.	
Académie des Sciences, Belles-Lettres et Arts de Rouen.	Rouen, France.	[iii]
Société d'Histoire et d'Archéologie et d'Histoire Naturelle de la Manche.	Saint Lô, France.	
Musée de Saint-Germain.	Saint-Germain-en-Laye, France.	
Matériaux pour l'Histoire Primitive et Naturelle de l'Homme.	Toulouse, France.	[1]
Société d'Histoire Naturelle de Toulouse.	Toulouse, France.	[1]

## GERMANY.

Naturforschende Gesellschaft des Osterlandes.	Altenburg, Saxe-Weimar.	[iii]
Annaberg-Buchholzer-Verein für Naturkunde.	Annaberg, Saxony.	
Naturhistorischer Verein.	Augsburg, Bavaria.	[1]
Archiv für Naturgeschichte.	Berlin, Prussia.	
Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte.	Berlin, Prussia.	[1]
Benth-Schnekel Museum.	Berlin, Prussia.	
Deutsche Zoologische Gesellschaft.	Berlin, Prussia.	
Gesellschaft Naturforschender Freunde.	Berlin, Prussia.	[1]
Königliche (Preussische) Akademie der Wissenschaften.	Berlin, Prussia.	[iii]
Königliche (Preussische) Museen, General-Direction.	Berlin, Prussia.	[iii]
Märkisches Provinzial-Museum.	Berlin, Prussia.	
Mineralien-Cabinet Mineralogisch Petrographisches Institut der Universität.	Berlin, Prussia.	
Ranch Museum.	Berlin, Prussia.	
Societatum Litterarum.	Frankfurt, Prussia.	[1]
Zoologisches Museum der Universität.	Berlin, Prussia.	[1]
Museum Ludwig Salvator.	Meissen, Saxony.	[1]
Mineralogisches Museum und Institut der Universität.	Bonn, Prussia.	
Naturhistorischer Verein der Preussischen Rheinlande und Westfalens.	Bonn, Prussia.	[iii]

Herzogliches Naturhistorisches Museum.	Braunschweig (Germany).	[i]
Naturwissenschaftlicher Verein.	Bremen, Germany.	[i]
Universitäts-Bibliothek.	Breslau, Prussia.	[iii]
Société d'Histoire Naturelle de Colmar.	Colmar, Alsace.	
Naturforschende Gesellschaft.	Danzig, Prussia.	[iii]
West-Preussisches Provinzial-Museum.	Danzig, Prussia.	
Grossherzogliches Museum.	Darmstadt, Hesse.	[i]
Naturhistorischer Verein.	Dessau, Anhalt.	[i]
Verein für Geschichte und Naturgeschichte der Baar.	Donauessingen, Baden.	[i]
Königliches Mineralogisch-Geologisch und Prähistorisches Museum.)	Dresden, Saxony.	[i]
Königliches Zoologisches und Anthropologisch-Ethnographisches Museum.	Dresden, Saxony.	[i]
Naturforschende Gesellschaft.	Emden, Prussia.	[iii]
Universitäts-Bibliothek.	Erlangen, Bavaria.	[iii]
Deutsche Malakozoologische Gesellschaft.	Frankfurt-am-Main, Prussia.	[i]
Neue Zoologische Gesellschaft.	Frankfurt-am-Main, Prussia.	[i]
Senckenbergische Naturforschende Gesellschaft.	Frankfurt-am-Main, Prussia.	[iii]
Zoologischer Garten (Redaktion).	Frankfurt-am-Main, Prussia.	
Naturforschende Gesellschaft.	Freiburg-im-Breisgau, Baden.	[i]
Verein für Naturkunde.	Fulda, Prussia.	
Universitäts-Bibliothek.	Giessen, Hesse.	[iii]
Zoologisches Museum.	Giessen, Hesse.	[i]
Naturforschende Gesellschaft.	Görlitz, Prussia.	[iii]
Königliche Societät der Wissenschaften.	Göttingen, Prussia.	
Zeitschrift für Wissenschaftliche Zoologie.	Göttingen, Prussia.	[i]
Zoologisches Museum.	Göttingen, Prussia.	
Geographische Anstalt (Justus Perthes).	Gotha, Saxe-Goburg.	[iii]
Verein der Freunde der Naturgeschichte in Mecklenburg. (Care of Opitz & Co.)	Güstrow, Mecklenburg.	[i]
Universitäts-Bibliothek.	Greifswald, Prussia.	[iii]
Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.	Halle-an-der-Saale, Prussia.	[i]
Die Natur Redaktion : (Dr. Karl Müller).	Halle-an-der-Saale, Prussia.	[iii]
Naturhistorisches Museum (Dr. Pagenstecher).	Hamburg, Germany.	
Naturwissenschaftlicher Verein Hamburg-Altona.	Hamburg, Germany.	[iii]
Königliche Oeffentliche Bibliothek.	Hannover, Prussia.	[iii]
Naturhistorische Gesellschaft.	Hannover, Prussia.	
Universitäts-Bibliothek.	Heidelberg, Baden.	[iii]
Medicinish-Naturwissenschaftliche Gesellschaft.	Jena, Saxe-Weimar.	[i]
Verein für Naturkunde.	Kassel, Prussia.	[i]
Universitäts-Bibliothek.	Kiel, Prussia.	[iii]
Naturhistorischer Verein.	Koblentz, Prussia.	
Museum für Völkerkunde.	Leipzig, Saxony.	[i]
Königlich-Sächsische Gesellschaft der Wissenschaften.	Leipzig, Saxony.	[iii]
Naturforschende Gesellschaft.	Leipzig, Saxony.	[i]
Zoologischer Anzeiger.	Leipzig, Saxony.	[i]
Naturhistorisches Museum.	Lübeck, Germany.	[i]
Museum-Verein. (United with the Naturwissenschaftlicher Verein.)	Lüneburg, Prussia.	[i]
Naturforschender Verein.	Meiningen, Saxe-Meiningen.	
Société d'Histoire Naturelle de Metz.	Metz, Lorraine.	[i]
Universitäts-Bibliothek.	München, Bavaria.	[iii]

Provinzial-Verein für Wissenschaft und Kunst.	Münster, Prussia.	[i]
Naturhistorische Gesellschaft.	Nürnberg, Bavaria.	[ii]
Naturhistorischer Verein.	Passau, Bavaria.	[i]
Kaiserliche Universitäts- und Lander-Bibliothek.	Strassburg, Alsace.	[iii]
Musée d'Histoire Naturelle.	Strassburg, Alsace.	[i]
Königliche Oeffentliche Bibliothek.	Stuttgart, Württemberg.	[iii]
Verein für vaterländische Naturkunde in Württemberg.	Stuttgart, Württemberg.	[iii]
Königliche Universitäts-Bibliothek.	Tübingen, Württemberg.	[iii]
Von Malzan'sches Naturhistorisches Museum.	Waren, Mecklenburg.	[i]
Verein für Naturkunde.	Wiesbaden, Prussia.	[iii]
Naturhistorischer Verein.	Zweibrücken, Bavaria.	

## ENGLAND.

Bath Natural History and Antiquarian Field Club.	Bath, England.	[i]
Birmingham Free Libraries (J. D. Mullins, Librarian, Radcliffe Place).	Birmingham, England.	[iii]
Birmingham Natural History and Microscopical Society. (Care of Mason College of Science.)	Birmingham, England.	[i]
Brighton and Sussex Natural History Society.	Brighton, England.	[i]
Bristol Museum and Library.	Bristol, England.	[i]
Suffolk Institute of Archæology and Natural History.	Bury St. Edmunds, England.	[i]
Morphological Laboratory, New Museum.	Cambridge, England.	
Museum of Zoology and Comparative Anatomy (Downing Street).	Cambridge, England.	
University Library.	Cambridge, England.	[iii]
East Kent Natural History Society. (Care of W. H. Housley, St. Stephen's Lodge, Canterbury, formerly in Dover.)	Canterbury, England.	[i]
Wiltshire Archæological and Natural History Society.	Devizes, England.	[i]
Devon and Exeter Albert Memorial Museum, School of Science and Art, and Free Library.	Exeter, England.	[iii]
Natural History Society.	Folkestone, England.	
Natural History and Antiquarian Society.	Isle of Man, England.	
Royal Botanic Gardens.	Kew, England.	[i]
Leeds Philosophical and Literary Society.	Leeds, England.	[iii]
Leicester Town Museum.	Leicester, England.	[i]
Free Public Library, Museum, and Walker Gallery of Art of the town of Liverpool.	Liverpool, England.	[iii]
Liverpool Marine Biological Station.	Puffin Island, Liverpool, England.	
Annals and Magazine of Natural History. (Care of Taylor & Francis, Red Lion Court, Fleet Street, E. C.)	London, England.	
Anthropological Institute of Great Britain and Ireland (3 Hanover Square, W.).	London, England.	[iii]
"Athenæum" (20 Wellington Street, Strand, W. C.).	London, England.	[i]
British Museum (Great Russell Street, Bloomsbury, W. C.).	London, England.	[iii]
British Museum, Natural History Division (Cromwell Road, South Kensington, S. W.).	London, England.	[iii]
Entomological Society (11 Chandos Street, Cavendish Square, W.).	London, England.	[iii]
Geological Society of London (Burlington House, W.).	London, England.	[iii]
Linnean Society (Burlington House, W.).	London, England.	[iii]
Quekett Microscopical Club (University College, Gower Street, W. C.).	London, England.	

Royal Geographical Society of London (1 Savile Row, W.).	London, England.	[iii]
Royal Microscopical Society (King's College, Strand, W. C.).	London, England.	[iii]
Royal Society of London (Burlington House, W.).	London, England.	[iii]
South Kensington Museum.	London, England.	[i]
Victoria Institute (or Philosophical Society of Great Britain, 8 Adelphi Terrace, W. C.).	London, England.	
Zoological Society of London (1 Hanover Square, W.).	London, England.	[iii]
'Zoologist.' (Care of Van Voorst, 1 Paternoster Row, E. C.)	London, England.	
Manchester Public Free Library (formerly "and Museum.")	Manchester, England.	[iii]
Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne (Museum, Newcastle).	Newcastle-upon-Tyne, England.	[iii]
Norfolk and Norwich Museum.	Norwich, England.	[i]
Free Library and Museum of the Borough of Nottingham.	Nottingham, England.	
Bodleian Library.	Oxford, England.	[iii]
Museum of Natural History.	Oxford, England.	[i]
Radcliffe Library (Museum).	Oxford, England.	[i]
Natural History and Antiquarian Society.	Penzance, England.	[i]
Marine Biological Association of the United Kingdom.	Plymouth, England	[i]
Plymouth Institution and Devon and Cornwall Natural History Society	Plymouth, England.	[i]
Natural History Society of Rugby School.	Rugby, England.	
Salford Royal Museum and Library.	Salford, England.	[i]
Shropshire Archæological and Natural History Society.	Shrewsbury, England.	
Somersetshire Archæological and Natural History Society.	Tannton, England.	[i]
Natural History Society.	Torquay, England.	[i]
Royal Institution of Cornwall.	Truro, England.	[i]
Warwickshire Natural History and Archæological Society	Warwick, England.	[i]

## IRELAND

Natural History and Philosophical Society	Belfast, Ireland.	[ii]
Royal Dublin Society (Kildare Street).	Dublin, Ireland.	[ii]
Royal Irish Academy.	Dublin, Ireland.	[iii]
Science and Art Museum.	Dublin, Ireland.	[i]

## SCOTLAND.

Aberdeen University.	Aberdeen, Scotland.	[ii]
University College.	Dundee, Scotland.	[ii]
Museum of Science and Arts.	Edmburg, Scotland.	[ii]
Royal Physical Society.	Edmburg, Scotland.	[i]
University Library.	Edmburg, Scotland	[iii]
Glasgow University. (Care of Mr. Maclehoze, Glasgow, per Mr. Billing, Ave Maria Lane, London, E. C.)	Glasgow, Scotland.	[ii]
Natural History Society of Glasgow (207 Bath Street).	Glasgow, Scotland	[i]
Montrose Natural History and Antiquarian Society	Montrose, Scotland.	[i]

## WALES.

Free Library and Museum,	Cardiff, Wales.
Naturalists' Society,	(Cardiff, Wales.

## GREECE.

Natural History Museum of the National Library. Athens, Greece. [i]

## GREENLAND (South).

Syd Grönlande Inspektorat. Godthaab, Greenland.

## ICELAND.

National Library of Iceland. Reykjavik, Iceland. [i]

## ITALY

Accademia delle Scienze dell' Istituto di Bologna. Bologna, Italy. [iii]  
 Museo Civico di Archeologia. Bologna, Italy.  
 Reale Museo di Fisica e Storia Naturale. Firenze, Italy. [iii]  
 Museo Civico di Storia Naturale. Geneva, Italy. [1]  
 Museo Civico di Storia Naturale. Milano, Italy.  
 Reale Istituto Lombardo di Scienze e Lettere. Milano, Italy. [iii]  
 Società Italiana di Scienze Naturali. Milano, Italy.  
 Società di Naturalisti in Modena. Modena, Italy.  
 Biblioteca Nazionale. Napoli, Italy. [iii]  
 Museo Nazionale di Napoli. Napoli, Italy. [1]  
 Stazione Zoologica di Napoli. Napoli, Italy.  
 Reale Accademia di Scienze, Lettere ed Arti di Padova. Padova, Italy. [iii]  
 "Il Naturalista Siciliano." Palermo, Italy. [1]  
 Museo di Storia Naturale. Parma, Italy.  
 Reale Università. Pavia, Italy [1]  
 Università. Pisa, Italy. [iii]  
 Biblioteca Nazionale Vittorio Emanuele. Rome, Italy. [ii]  
 Reale Accademia dei Lincei. Rome, Italy. [ii]  
 Reale Museo Industriale Italiano. Rome, Italy.  
 Società Italiana delle Scienze. Rome, Italy. [ii]  
 Accademia Reale delle Scienze. Torino, Italy. [ii]  
 Direzione di "Cosmos" (Guido Cora) Torino, Italy. [1]  
 Reale Museo di Storia Naturale. Torino, Italy. [1]  
 Reale Museo Zoologico di Torino. Torino, Italy. [1]  
 Musei di Zoologia ed Anatomia comparata della R. Università di Torino. Torino, Italy.  
 Archives Italiennes di Biologie. Torino, Italy.  
 Reale Istituto Veneto di Scienze, Lettere ed Arti. Venezia, Italy. [iii]

## NETHERLANDS.

Koninklijke Akademie van Wetenschappen. Amsterdam, Netherlands. [iii]  
 Koninklijke Zoologisch Genootschap "Natura Artis Magistra." Amsterdam, Netherlands. [ii]  
 Koninklijk Zoologisch-Botanische Genootschap te 'S Gravenhage (Holland). 'S Gravenhage (The Hague). [1]  
 Naturkundig Genootschap. Groningen, Netherlands. [1]  
 Rijks Universiteit (formerly Academia Groningana). Groningen Netherlands. [1]  
 Hollandse Maatschappij van Wetenschappen. Haarlem, Netherlands. [ii]  
 Rijks Museum van Natuurlijke Historie. Leiden, Netherlands. [1]  
 Rijks Ethnographisch Museum. Leiden, Netherlands. [1]  
 Rijks Universiteit. Leiden, Netherlands. [iii]  
 Société Néerlandaise de Zoologie Rotterdam, Netherlands.  
 Rijks Universiteit, Utrecht, Netherlands. [ii]

## NORWAY.

Arendals Skoles offentlige Bibliothek og Museum.	Arendal, Norway.	[i]
Bergen Museum.	Bergen, Norway.	[iii]
Library of the University. (Det Kongelige Norske Frederiks.)	Christiania, Norway.	[iii]
Museum of Zoology. (Det Kongelige Norske Frederiks.)	Christiania, Norway.	[iii]
Videnskabs Selskabet.	Christiania, Norway.	[i]
Stavanger Museum.	Stavanger, Norway.	
Det Kongelige Norske Videnskabernes Selskab.	Trondhjem, Norway.	[iii]
Tromsø Museum.	Tromsø, Norway.	[i]

## PORTUGAL.

Academia Real des Sciencias.	Lisbon, Portugal.	[iii]
Museo de Lisboa (Lisbon).	Lisbon, Portugal.	[i]
Museo de Historia Natural da Camara Municipal do Porto.	Oporto, Portugal.	

## RUSSIA.

Derptskoie Obshestvo Iestesto-Ispytalei.	Derpt, Russia.	[i]
Finskoie Uchonoie Obshestvo (Societas, Scientiarum Fennica, Finska Vetenskaps-Societets).	Helsingfors, Russia.	[iii]
Obshestvo dla izsledovania Iaroslafskoi gubernii v iestestvenno-istoricheskom otnoshenii.	Iaroslavl, (Yaroslav) Russia.	[i]
Imperial Kazanskii Universitet.	Kazan, Russia.	[ii]
Imper. Kharkofskii Universitet.	Kharkof, Russia.	[i]
Imper. Universitet Sviatovo Vladimira.	Kief, Russia.	[i]
Imper. Moskofskoie Obshestvo Iestestvo-Ispytalei.	Moskva (Moscow), Russia.	[iii]
Imper. Obshestvo Lubitelei Iestestvoznania, Antropologii i Etnografii.	Moscow, Russia.	[i]
Moskofskii Publichnyi i Rumiantsefskii Muzei.	Moscow, Russia.	[i]
Novo-Rossiiskoie Obshestvo Iestestvo-Ispytalei.	Odessa, Russia.	
(The library of this society is inseparably connected with the university.)		
Obshestvo Iestestvo-Ispytalei (Naturforscherverein).	Riga, Russia.	[iii]
Imper. Akademia Nank.	Sankt-Peterburg (St. Petersburg), Russia.	[iii]
Imper. Sankt-Peterburgskii Universitet.	St. Petersburg, Russia.	[i]
Sankt-Peterburgskoie Obshestvo Iestestvo-Ispytalei.	St. Petersburg, Russia.	[i]
Kavkazskii Muzei.	Tiflis, Russia.	
Imper. Varshafskii Universitet.	Varshava (Warsaw), Russia.	[i]
Vilenskaia Publichnaia Biblioteka i Musei Drevnostei.	Vilna, Russia.	[i]

## SPAIN.

Sociedad Española de Historia Natural.	Madrid, Spain.	[i]
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## SWEDEN.

Götheborg Museum.	Götheborg, Sweden.	
Kongliga Universitet.	Lund, Sweden.	[iii]
Kongliga Svenska Vetenskaps Akademien.	Stockholm, Sweden.	[iii]
Nordiska Museet.	Stockholm, Sweden.	
Royal Museum of Natural History.	Stockholm, Sweden.	
Kongliga Universitet.	Upsala, Sweden.	[i]

## SWITZERLAND.

Aorganische Naturforschende Gesellschaft.	Aaran, Switzerland.	[i]
Naturforschende Gesellschaft.	Basel, Switzerland.	[iii]
Universitäts-Bibliothek.	Basel, Switzerland.	[i]
Naturforschende Gesellschaft.	Bern, Switzerland.	[iii]
Universitäts-Bibliothek.	Bern, Switzerland.	[iii]
Thurgauische Naturforschende Gesellschaft.	Frauenfeld, Switzerland.	[i]
"Bibliothèque Universelle."	Genève, Switzerland.	
Musée Zoologique.	Genève, Switzerland.	
Société de Physique et d'Histoire Naturelle.	Genève, Switzerland.	[iii]
Société Vandoise des Sciences Naturelles.	Lansanne, Switzerland.	[i]
Société des Sciences Naturelles.	Neuchâtel, Switzerland.	[iii]
Naturforschende Gesellschaft Graubündens.	Olten, Switzerland.	
Naturhistorische Gesellschaft.	Rheinfelden, Switzerland.	[i]
Naturforschende Gesellschaft.	Solothurn, Switzerland.	
Naturforschende Gesellschaft.	Zurich, Switzerland.	[iii]
Zoologisches Museum.	Zurich, Switzerland.	

## TURKEY.

Robert College.	Constantinople, Turkey.	[iii]
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