
SECTION 1.

REPORT

UPON THE

CONDITION AND PROGRESS OF THE U. S. NATIONAL MUSEUM
DURING THE YEAR ENDING JUNE 30, 1891.

BY

G. BROWN GOODE,

ASSISTANT SECRETARY OF THE SMITHSONIAN INSTITUTION, IN CHARGE
OF U. S. NATIONAL MUSEUM.

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A.—GENERAL CONSIDERATIONS.

Before entering upon a detailed statement of the operations of the Museum during the period covered by this Report, it is perhaps not undesirable to briefly outline its history, organization, and aims, in order that the true relationships of the work now to be reported upon, as the outgrowth of the activities of other years, may be comprehended.

The Smithsonian Institution was established by act of Congress in 1846. One of the provisions of the act was that "all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens" belonging to the United States should be placed in the custody of the Institution, to be arranged and classified so as to be available for students. It was also provided that a miscellaneous collection of objects known as "the National Cabinet of Curiosities," which had accumulated in the Patent Office, should be transferred to the Institution.* A beginning was thus made for the National Museum, which, however, was not recognized officially under that designation until a later date. The various steps which resulted in the formation of the National Museum are pointed out at some length in a paper printed in Section III of this Report, and entitled "The Genesis of the National Museum."

The Institution from its foundation fostered explorations, and its Museum was enriched by the numerous ethnological and natural history objects brought home by the explorers. Many gifts were received from private sources, and objects of various kinds were deposited in the Museum for safe-keeping.

At the time of the establishment of the Institution numerous important naval expeditions and surveys of the public domain had recently been, or were being, organized by the Government, and during their

* This collection was not accepted by and transferred to the Institution until 1858,

progress very extensive collections of natural history and other objects were made. Important collections from foreign countries were made by the Wilkes Exploring Expedition, Perry's Japan Expedition, and numerous other naval expeditions, while the naturalists attached to the Pacific Railroad Survey, the Mexican Boundary Survey, and other surveys under the Engineer Corps of the Army, brought together great collections of objects illustrating the natural resources and ethnology of the United States.

At a somewhat later period, when the geological surveys of the Territories were organized, large additional collections were formed.

A new source of increment was opened by the investigation of the Fish Commission into the aquatic fauna of the continent.

At the close of the Centennial Exhibition in 1876 the exhibits of the United States Government, as well as those of numerous foreign governments and of private exhibitors, came into the possession of the National Museum.

Since 1876, though the growth of the Museum has been much more rapid, no single source of increment has predominated. The complexity of the collections, however, has been greatly increased. The collections are now more than sixteen times as large as in 1882, which was the first year of systematic work in the new Museum building.

Among the principal sources of miscellaneous increase since the Centennial Exhibition may be mentioned the Fisheries Exhibitions of Berlin and London, the New Orleans Cotton Centennial Exposition in 1884 and 1885, and the Cincinnati Exposition in 1887. A large amount of material has also been derived through exchange with museums and individuals at home and abroad.

With the acquisitions from the Centennial Exhibition a new epoch began in the history of the Museum. The storage rooms and exhibition halls of the Smithsonian building were overflowing with the accumulations of thirty years, and the small number of persons employed in caring for them were overburdened and unable to keep abreast with the necessary work. Furthermore, as already stated, the complexity of the collections had very largely increased, necessitating a new and broader classification. The growth of the country in wealth and culture led to the establishment of many local museums, and the educational influences flowing from these and from the Centennial Exhibition caused a demand for better systems of installation and explanation of the collections.

On account of these circumstances an appeal was made to Congress for a new building for the National Museum and for increased appropriations for its maintenance. A new building was provided for in 1879 and a complete reorganization of the Museum was undertaken two years later.

By law the Secretary of the Smithsonian Institution is *ex officio* director of the Museum. He is empowered to employ suitable assistants for

carrying on the work of the Museum, for whose action he is responsible to the Regents of the Institution. For many years the work was carried on by Prof. Baird with no more than two or three assistants. The Museum was not formally divided into departments. When the reorganization was made, the diversity of the collections made it necessary to institute numerous departments, each of which was placed in charge of a curator. The number of curators changes with the changing necessities of the Museum. At present the scientific staff is composed of the assistant secretary of the Smithsonian Institution in charge of the National Museum, and thirty-two curators and acting curators, twenty-two of whom receive no salary from the Museum. There are also eleven administrative departments. (A list of the scientific departments and of the officers in charge of them is given on page 21.)

Three factors at least are necessary for the proper administration of a large museum. A philosophical classification must be adopted, sufficiently comprehensive and elastic to facilitate the distribution of the objects in the collections. A staff of assistants must be employed, competent to make the proper classification of the objects placed in their care, and to prevent their deterioration. A system of installation and arrangement must be devised, which will permit a satisfactory examination of the collections by students and others.

The matter of classification has engaged the thought of the officers of the Museum for many years. The chief difficulties are encountered in the classification of those collections which illustrate the history of human culture, on account of the intricacy of the subject and its manifold aspects and relationships. Some remarks on this branch of classification, which can not be repeated in this outline, will be found in the report for the year 1884. In the zoölogical, botanical, and geological departments, which form a considerable portion of the Museum, a satisfactory classification is more easily determined upon on account of the labors of systematic naturalists, running back for two centuries.

In the arrangement and installation of the collections the interests of three classes of persons have to be kept in view—those engaged in independent researches, students in colleges and schools, and casual visitors. So far as the investigator is concerned, it is only necessary that the objects in a Museum should be preserved in good condition and so arranged as to be available for study. The college student demands something more. To be of the highest service to him, objects must be arranged in series, without duplication, each showing the various phases of some one subject or the development of an idea or the modifications of a type of structure; and must, furthermore, be labeled in such a manner that the reason for their exhibition is unmistakable. He must, in other words, have presented to him a variety of object-lessons. The casual visitors, who in point of numbers exceed the other classes, make quite different demands. They do not come to a Museum to study in detail any single group of objects, but from intelli-

gent curiosity to see the wonders of nature, the masterpieces of art, and those things which illustrate in the most striking manner the history and progress of civilization. They demand that the collections shall be conveniently and attractively arranged and provided with brief and legible labels. An attempt is made in the National Museum to meet the demands of all these classes. Large numbers of specimens, in addition to those in the exhibition cases, are preserved for use in researches, and these are frequently loaned for study, or (in the zoölogical departments) are given freely to investigators for dissection and other similar purposes. As far as possible, educational series of objects similar to those in the Museum are made up from the duplicate specimens and distributed to educational institutions throughout the country. In this way the advantages of the Museum are extended to many who have never been within its walls. (A statement of the distributions during the year will be found on page 35.)

In the matter of cases and appliances the Museum makes use of those forms which experience at home and the study of the museums of Europe have demonstrated to be the best. Many forms of cases which have been designed or perfected by the officers of the National Museum are in use in other museums both in the United States and elsewhere.

The importance of labels is fully understood by the officers of the Museum, and much time is spent every year in their preparation. The Museum enjoys the advantage of having printed labels in place of written ones. Their legibility and attractiveness is thus greatly increased.

Every museum has its special characteristics growing out of its form of organization, its location, scope, and financial and other resources. The character of the National Museum is fundamentally affected by its connection with the Smithsonian Institution, its dependence upon Congress for appropriations annually, and the necessity under existing laws of its caring for all collections belonging to the Government.

Of the connection of the Museum with the Smithsonian Institution nothing but good can be said. It should be borne in mind that it is in part a Smithsonian Museum, since, especially in its earlier history, the Institution expended considerable sums of money in aiding explorations with the distinct purpose of increasing the collections in certain directions. It has had in addition, for nearly half a century, the use of the larger portion of the Smithsonian building, and what is of paramount importance, the guidance and influence of the officers of the Institution, and the very valuable assistance of its numerous correspondents.

The necessity of depending on appropriations made annually, while unavoidable under our system of government, is not without serious drawbacks. It renders difficult or impossible the carrying out of many far-reaching plans for the symmetrical growth of the Museum, and places it at a disadvantage with endowed museums under private auspices.

The necessity of caring for Government collections of many kinds gives, as already stated, a very wide scope to the Museum, and impresses upon it characteristics scarcely to be found in any other similar organization. What is here brought together in two buildings has its counterpart in England, Germany, France, and other European countries in groups of museums, each with a limited and well-defined scope.

It is unnecessary to enter a plea for the right of a national museum to exist. Its establishment is not forced upon the country. It grows up unsolicited as a consequence of the activities of an enlightened Government. Through a thousand channels materials for the formation of a museum come into the possession of the Government. It can not be questioned that it is in every way most desirable that these should be brought together in one place, where they can be classified and arranged for examination and study. A museum formed in this manner, however, suffers sooner or later from the immense accumulation of objects of the same kind in certain directions and from deficiencies in others. It has been so in the case of the National Museum. At the outset no addition was unwelcome, and the expectation that all important deficiencies would be supplied might properly be indulged in. As the years have passed, however, it has become more and more apparent that many of these deficiencies would only be made good by the purchase of the necessary objects, and the importance of increased appropriations for the purchase of collections and single objects to complete the various series in the Museum is very strongly felt.

In its present condition the Museum may be likened to a book from which pages here and there have been omitted, so that the narrative is disjointed and incomplete. There are instances in this country in which more money is expended for the improvement of private museums than is expended for the National Museum. In certain museums of Europe more money is expended annually in purchases than is represented by the entire appropriations for the National Museum. The officers of the Museum have repeatedly suffered the chagrin of being compelled to refuse the offer of specimens necessary to complete the collections, and to see them pass into the hands of private institutions in this country or the government museums in Europe.

B.—ORGANIZATION AND SCOPE OF THE MUSEUM.

The National Museum is under the direction of the Smithsonian Institution, which is governed by an establishment consisting of the President of the United States and his Cabinet, the Commissioner of Patents, and the Board of Regents, which latter is composed of the Vice-President, Chief Justice of the United States, three members of the Senate, three members of the House of Representatives, and six other citizens not members of Congress, two of whom are residents of the city of Washington.

The Secretary of the Smithsonian Institution, to whom is intrusted the actual management of its affairs, is by law the "keeper of the collections." The scientific staff at the present time, as already stated, is composed of the Assistant Secretary of the Smithsonian Institution in charge of the National Museum and thirty-two curators and acting curators, twenty-two of whom receive no salary from the Museum appropriation. There are also eleven administrative departments.

PRINCIPAL SOURCES OF THE 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 collection 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; the fishery collections displayed by the United States at the International Fisheries Exhibition at Berlin in 1880 and at London in 1883, and the collections obtained from various local expositions; as, for instance, the New Orleans Cotton Centennial Exposition, in 1884 and 1885, and the Cincinnati Exposition, in 1887.

(8) The collections given by the governments of the several foreign nations, thirty in number, which participated in the exhibition at Philadelphia in 1876.

(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.

(11) Collections received as gifts, deposits, or in exchange, from individuals, numbering usually from 1,000 to 1,500 each year.

C.—SPECIAL TOPICS OF THE YEAR.

INCREASE IN THE COLLECTIONS DURING THE DECADE 1881-1891.

At the close of 1881 a census of the collections was taken, resulting in the preparation of a table, published in subsequent reports, which gave 193,362 as the approximate total number of specimens of all kinds at that time entered in the catalogue books of the several departments of the Museum. The census for the year ending June 30, 1891, places the total number of specimens of all kinds at 3,028,714, showing an increase of about nineteen-fold during the decade. It must, however, be stated that a large proportion of the material catalogued in 1884 and in later years, had been in the custody of the Smithsonian Institution for several years, but had remained in storage on account of there being no opportunity to have it classified and entered in the catalogue books. In this way the immense increase in the totals for 1884 as compared with those for 1882 may be partly accounted for.

There still remains in the basement of the Smithsonian building and in the old Armory building a considerable amount of material, consisting largely of gifts from foreign governments and contributions from expositions, which has not yet been brought under control, owing to lack of space and other necessary facilities.

INCREASE IN THE MUSEUM LIBRARY.

The number of publications added to the Museum Library during the year was 12,854, including 922 books of more than 100 pages, 2,492 pamphlets, 9,280 parts of serials, and 160 charts.

INCREASED EDITION OF MUSEUM REPORTS.

In place of 16,000 extra copies, the Fifty-first Congress has ordered that 19,000 copies of reports of the Museum be printed. This will allow 3,000 copies to be set apart for distribution by the Museum to its contributors and correspondents.

VISITORS.

The number of visitors to the Museum building during the year ending June 30, 1891, was 286,426, and during the same period 111,669 persons visited the Smithsonian Institution. The total number of visitors since 1881 (during the last decade) to the Museum building is 2,398,375, and to the Smithsonian Institution 1,081,681.

MUSEUM APPROPRIATIONS FOR 1891-'92.

Preservation of collections	\$145,000
Furniture and fixtures	25,000
Printing	15,000
Heating and lighting	12,000
Purchase of Capron collection	10,000
Repairing floors, etc	5,000
Duty on glass, etc	1,000
Postage, etc	500
Total	<u>213,500</u>

PROPOSED ADDITIONAL MUSEUM BUILDING.

On January 9, 1891, the bill providing for a new Museum building was favorably reported from the House Committee on Public Buildings and Grounds, but failed of passage.

CAST OF STATUE OF LIBERTY.

Through the coöperation of the Architect of the Capitol, Hon. Edward Clark, the original full-size plaster model of Thomas Crawford's statue of liberty was transferred from the crypt in the Capitol to the Museum. The bronze was cast by Clark Mills, at his foundry, near Bladensburg, Md., in 1860, and is 19 feet 5 inches in height. This model had been stored in a cellar room of the Capitol, and had unfortunately been broken into fragments, when the work of transferring it to the Museum was undertaken by Theodore A. Mills, an employé of the Museum.*

THE DAGUERRE MEMORIAL.

On August 15, 1890, a bronze statue of Daguerre was unveiled in the rotunda of the National Museum building, by the Secretary of the Interior. This monument, in honor of Louis Jacques Mandé Daguerre, was presented by the Photographers' Association of America, which was holding its annual meeting in Washington at that time. Daguerre, in coöperation with Joseph Nicéphore Niepce, invented and perfected the daguerreotype, the announcement of which was made at the session of the French Academy of Sciences, in 1839. The monument is 11 feet in height, and is made of bronze and granite. It represents Fame fastening a garland around the head of Daguerre. The garland also encircles the globe, thus typifying the universal benefit of his invention. The monument is the work of Jonathan Scott Hartley.

THE CAPRON COLLECTION.

This collection, consisting of gold lacquers, bronzes, porcelains, carvings in ivory and wood, and many other works of art, was obtained by the late Gen. Horace Capron while United States minister to Japan. A bill for its purchase was introduced into the Senate on March 1, 1888 (Fiftieth Congress, first session), by Senator Daniel W. Voorhees, and passed the Senate on March 31. On August 8 of the same year Mr. O'Neill, of

* The following order, issued by Hon. John B. Floyd, Secretary of War, May 24, 1860, may be of interest in this connection:

"The proposed statue of Freedom, modeled by Crawford, for the dome of the Capitol, will be cast by Clark Mills at his foundry near Bladensburg under the direction of Capt. William B. Franklin of the Topographical Engineers in charge of the Capitol Extension. Mr. Mills will be paid for his services and for the rent of his foundry at the rate of \$400 per month from the commencement to the termination of the work. The materials, fuel, labor, and everything necessary for the casting of the figure will be supplied by the Government."

Pennsylvania, from the Committee on the Library, submitted a report stating that, in the opinion of the committee, the collection should be purchased by the Government and placed in the National Museum. This bill did not pass the House. It was again introduced into the Senate on December 4, 1889, by Senator Voorhees, and passed the Senate on March 29, 1890. It was also reported a second time from the House Committee on the Library, on May 19, 1890, but failed to pass. In the sundry civil bill for the year ending June 30, 1892, an appropriation of \$10,000 was made for the purchase of this collection.

The lacquered objects are the most valuable in the collection, particularly the four specimens which bear the crest of one of the families of the Shoguns. The bronzes are forty-six in number, and in addition there are two objects in silver bronze and one in gold bronze, representing birds and flowers. The ivory carvings are thirty-seven in number. There is also included a collection of sixty-three Japanese coins, thirty-five of which are of gold.

When Gen. Capron returned to the United States, he generously placed these treasures in the custody of the Smithsonian Institution, where they were exhibited. After his death, in 1885, Mrs. Capron signified her desire to allow the collection to remain in the Institution. It has always attracted a great deal of attention from visitors of all classes, and its acquisition by the Government of the United States is a source of congratulation.

TYPES OF THE OWEN COLLECTION OF FOSSILS.

The Owen type specimens of fossils, mentioned on page 759 of the report of the National Museum for 1888 as having been "presented" to the Museum by the Indiana State University through the courtesy of the university, will be retained in the National Museum as a "deposit" subject to the order of the board of trustees of the university. These specimens have been described and illustrated in Government publications.

MEETINGS OF ASSOCIATIONS IN WASHINGTON DURING THE YEAR.

Washington has during recent years been selected as the place for holding meetings of a large number of national and international societies of all kinds. Each year has seen an increase in this respect, and the matter has now become of such importance (not so much, however, on account of the *number* as of the *character* of the societies) that it seems proper to make mention of it in a report which is intended to contain in a general way a reference to all efforts to develop and encourage research, both from a scientific, economic, and a literary point of view. There is probably no place in the country better suited for such meetings. The seat of government and center of political activity has become accustomed to receiving and entertaining organizations.

During the last fiscal year numerous learned bodies met in various halls in this city. The many attractions of the capital, the opportunity of easy access to public record offices and the Congressional Library, the general interest of the Government buildings, combine to make Washington a favored city for such purpose. During the last fiscal year the following organizations, among others, held their meetings here:

Photographers' Association	Aug. 11.
Association of Official Agricultural Chemists	Aug. 28-30
Convention of American architects	Oct. 22-24.
Convention of iron and steel men	Oct. 25.
American Ornithologists' Union.....	Nov. 18-20.
American Economic Association	Dec. 30.
American Forestry Association	Dec. 30.
American Historical Association	Dec. 30.
National Dairy and Food Commissioners' Association	Jan. 14, 15.
National American Woman's Suffrage Association	Feb. 16.
The National Mary Washington Memorial Association	Feb. 25.
Triennial meeting of the Woman's National Council	Feb. 25.
Southern Tariff Association.....	Mar. 25.
American Association of Inventors and Manufacturers	Apr. 8-10.
National Academy of Sciences	Apr. 21-24.
Association of Medical Superintendents of American Institutions for the Insane	Apr. 29.
American Academy of Medicine	May 2-4.
Conferences of State Boards of Health	May 2-4.
American Fisheries Association.....	May 27, 28.
National Geographical Society

PARTICIPATION OF THE SMITHSONIAN INSTITUTION IN THE WORLD'S COLUMBIAN EXPOSITION.

Mention was made in the last report of the provision by Congress for holding an Exposition in the city of Chicago in 1893 for the purpose of celebrating the four hundredth anniversary of the discovery of America by Christopher Columbus. Dr. G. Brown Goode, assistant secretary, in charge of the National Museum, was appointed by the President the representative of the Smithsonian Institution and the National Museum upon the Government Board of Managers and Control. Dr. Goode was invited by the Government Commission to prepare for its use a preliminary plan of classification for the Exhibition. This was done, and in September, 1890, a "draft of a system of classification" was presented to the Committee on Classification. It formed the basis of the classification subsequently adopted, although modified of course by the necessities of the case and the peculiar views of the executive heads of the various departments of the Exhibition. This classification has never been published, although a small edition was printed for the use of the committees. It was, however, never made accessible for general use. It was published under the following title: "First Draft of a System

of Classification for the World's Columbian Exposition." In the preparation of this classification an exhaustive study was made of all classifications which had been published in connection with previous exhibitions. Since up to the present time no attempt has been made to prepare a scheme so generally comprehensive, it is reproduced in the Appendix (Section III) to this report, in the hope that it may be useful to persons who are engaged in exhibition or museum administration.

During the latter part of the year the Treasury Department decided that the sum of between \$30,000 and \$40,000 was available for expenditure in connection with the preparation of the Government exhibits. This sum was divided among the executive departments, including the Smithsonian Institution, the National Museum, and the Fish Commission; the Smithsonian Institution, including the National Museum and the Bureau of Ethnology, receiving about \$6,000. As soon as this money became available, several of the curators in the National Museum commenced work upon the special exhibits of their departments, and a force of taxidermists and mechanics was engaged. Mr. R. Edward Earll was appointed chief special agent in April, and will act as the executive officer under the direction of the representative of the Smithsonian Institution.

PATENT CENTENNIAL CELEBRATION.

The celebration of the beginning of the second century of the American patent system by a Congress of American Inventors and Manufacturers was held on April 8, 9, and 10, 1891. A committee of citizens of Washington was appointed to carry out the details. Mr. J. E. Watkins, curator of the section of transportation, was appointed secretary. The ceremonies consisted of a series of meetings at which addresses relating to the history and influence of invention were delivered by prominent statesmen, inventors, political economists, and engineers. During the meetings a loan collection was installed in the lecture hall of the National Museum, where machines of antique design, models, and early patents were inspected and studied. In this collection were patents signed by Washington, Madison, and Monroe, the first two talking-machines, an antique electrical railway constructed in 1837, the original Morse telegraph instruments, the first photographic camera made in the United States, the original typewriting machine from which the perfected Remington typewriter was constructed, early forms of sewing machines, besides other curious and useful devices, many of which have been donated to the Museum, and are now on exhibition. Prof. Otis T. Mason, curator of ethnology, read a paper before the congress, entitled "The Birth of Invention."

BOARD ON GEOGRAPHIC NAMES.

Prof. Otis T. Mason, curator of ethnology in the National Museum, was appointed by the President of the United States a member of the

Board of Geographic Names. The decisions of this Board in regard to the spelling and pronunciation of geographical names will be accepted as final.

NECROLOGY.

Mention should be made of the death of Mr. William Wesley, of London, on April 17, 1891. For nearly thirty years he was identified with the Smithsonian Institution as its agent in the transmission of books and other material, through the Bureau of International Exchanges.

D.—THE CONDITION OF THE COLLECTIONS.

It is evident, from a perusal of the reports of the curators, that special effort has been made during the year to bring the collections into as satisfactory a condition as possible. The lack of space for the installation of additional specimens in most of the departments renders further development, so far as the exhibition series are concerned, impracticable.

A large proportion of the accessions is reserved for the duplicate and study series, and the increase during the year, including the specimens intended for exhibition, is indicated in the following table:

Departments.	No. of specimens.	Departments.	No. of specimens.
Arts and industries:		Reptiles and batrachians	885
Materia medica	168	Fishes	4,737
Animal products	45	Vertebrate fossils	9
Domestic animals (for mounting)	31	Mollusks (including cenozoic fossils)	5,000
Historical collection, coins, medals, paper money, etc.	3,000	Insects	12,000
Musical instruments	95	Marine invertebrates	6,750
Transportation and engineering	222	Comparative anatomy:	
Modern porcelain, porcelain and bronzes	12	Mammals (skulls and skeletons	655
Physical apparatus	10	Birds	
Graphic arts	374	Reptiles and batrachians	
Ethnology	1,800	Invertebrate fossils:	
American aboriginal pottery	1,219	Paleozoic	615
Oriental antiquities	2	Mesozoic	8,449
Prehistoric anthropology	4,084	Fossil plants	178
Mammal (skins and alcoholics)	465	Recent plants	40,963
Birds	2,382	Minerals	7,135
Birds' eggs and nests	925	Geology	31,400
			133,610

In order to present a basis for comparison in the matter of the growth of the collections during previous years and in 1891, the following table is presented, showing the annual increase since 1881:

Table showing annual increase in the collections since 1881.

Name of department.	1882.	1883.	1884.	a 1885-'86.	1886-'87.	1887-'88.	1888-'89.	b 1889-'90.	1890-'91.
Arts and industries:									
Materia medica		4,000	4,442	4,850	5,516	5,762	5,942	6,915	6,683
Foods		d 1,244	1,580	e 822	f 877	g 877	911	1,111	1,111
Textiles			2,000	3,063	3,144	g 3,144	3,222	3,288	3,288
Fisheries			5,000	e 9,870	10,078	g 10,078	g 10,078	10,080	10,080
Animal products			1,000	2,792	2,822	g 2,822	2,948	2,949	2,994
Graphic arts							600	600	974
Transportation and engineering								1,250	1,472
Naval architecture			600				g 600	h 600	600
Historical relics				1,002		14,640		20,890	23,890
Coins, medals, paper money, etc.				1,005	13,634				
Musical instruments				400	417	427	427	447	542
Modern pottery, porcelain, and bronzes ..				2,278	2,258	3,011	3,011	3,132	3,144
Paints and dyes				e 77	100	g 100	109	197	197
"The Catlin Gallery"				500	500	500	i 500		
Physical apparatus				250	251	g 251	g 251	263	273
Oils and gums				e 197	198	g 198	213		
Chemical products				e 659	661	g 661	688	1,112	1,112
Domestic animals								66	97

a No census of the collection taken for first half of 1885.

b The actual increase in the collections during the year 1889-'90 is greater than appears from a comparison of the totals for 1889 and for 1890. This is explained by the apparent decrease in the collections of the department of lithology and metallurgy, which is due to the rejection of worthless material.

c Although about 200 specimens have been received during the year, the total number of specimens in the collection is now less than estimated for 1889, owing to the rejection of worthless material.

d Including paints, pigments, and oils.

e Duplicates not included.

f Foods only.

g No entries of material received during the year have been made on the catalogue.

h No estimate of increase made in 1890.

i Hereafter to be included in the historical collections.

Table showing annual increase in the collections since 1851—Continued.

Name of department.	1882.	1883.	1884.	a 1885-'86.	1886-'87.	1887-'88.	1888-'89.	b 1889-'90.	1890-'91.
Ethnology.....			200,000	e 500,000	503,764	505,464	506,324	508,830	510,630
American aboriginal pottery.....			12,000	25,000	e 26,022	e 27,122	28,222	29,269	30,488
Ornamental antiquities.....							830	3,485	3,487
Prehistoric anthropology.....	35,512	40,491	45,252	65,314	101,659	108,631	116,472	122,677	127,761
Mammals (skins and alcoholics).....	4,660	4,920	5,094	7,451	7,811	8,058	8,275	8,836	9,301
Birds.....	44,354	47,246	50,350	55,945	54,937	56,484	57,974	60,219	62,601
Birds' eggs and nests.....			40,072	44,163	d 48,173	50,055	50,173	51,241	52,166
Reptiles and batrachians.....			23,495	25,344	27,542	27,664	28,405	29,050	29,935
Fishes.....	50,000	65,000	68,000	75,000	100,000	101,550	107,350	122,575	127,312
Vertebrate fossils.....								e 512	521
Mollusks.....	f 33,375		400,000	g 460,000	425,000	455,000	468,000	471,500	476,500
Insects.....	1,000		151,000	e 500,000	e 585,000	595,000	603,000	618,000	630,000
Marine invertebrates.....	f 11,781	f 14,825	e 200,000	e 350,000	e 450,000	515,000	515,300	520,000	526,750
Comparative anatomy:									
Osteology.....	3,535	3,640	4,214	10,210	e 11,022	11,558	11,753	12,326	12,981
Anatomy.....	70	103	3,000	3,000					
Paleozoic fossils.....		20,000	73,000	80,482	84,491	84,649	91,126	92,355	92,970
Mesozoic fossils.....			100,000	69,742	70,775	70,925	71,296	71,305	79,754
Cenozoic fossils.....									
(Included with mollusks.)									
Fossil plants.....		4,024	h 7,291	i 7,129	8,462	10,000	10,178	10,507	10,655
Recent plants.....				30,000	e 32,000	e 38,000	38,459	j 39,654	80,617
Minerals.....		14,550	16,610	18,401	18,601	21,846	27,690	37,101	44,236
Lithology and physical geology.....	k 9,075	12,500	18,000	20,647	e 21,500	22,500	27,000		
Metalurgy and economic geology.....		30,000	40,000	48,000	e 49,000	51,412	52,076		e 64,162
Living animals.....						220	m 491		
Total.....	193,362	263,143	1,472,600	2,420,944	2,666,335	2,803,459	2,864,244	2,895,104	3,028,714

a No census of the collection taken for first half of 1885.

- b* The actual increase in the collections during the year 1889-'90 is greater than appears from a comparison of the totals for 1889 and for 1890. This is explained by the apparent decrease in the collections of the department of lithology and metallurgy, which is due to the rejection of worthless material.
- c* Estimated.
- d* Including nests.
- e* Only a small portion of the collection represented by this number was received during the year 1889-'90.
- f* Catalogue entries.
- g* Including Cenozoic fossils.
- h* Fossil and recent plants.
- i* Exclusive of Prof. Ward's collection.
- j* This relates only to specimens received through the Museum, and does not include material added to the National herbarium through the Department of Agriculture.
- k* In reserve series.
- l* Collections combined in October, 1889, under department of geology. The apparent decrease of more than 50 per cent of the estimated total for 1889 is accounted for (1) by the rejection of several thousands of specimens from the collection, and (2) by the fact that no estimate of the specimens in the reserve and duplicate series is included. (3) The total for 1890 about 16,000 specimens consist chiefly of petrographical material stored away for study and comparison in the drawers of table cases.
- m* Transferred to the National Zoological Park

CATALOGUE ENTRIES.

The number of catalogue entries made in the books of the several departments during the year amounts to 21,942. Under one entry may be mentioned one specimen, or a large number of specimens, if from the same locality or of the same species. The following table shows the number of entries made in each department during the year:

Departments.	No. of specimens.	Departments.	No. of specimens.
Arts and Industries:		Reptiles and batrachians	908
Materia medica	168	Fishes	1,542
Animal products	45	Vertebrate fossils	458
Domestic animals (for mounting) ..	97	Mollusks (including cenozoic fossils) ..	5,605
Historical collections, coins, medals, paper money, etc	56	Insects	174
Musical instruments	95	Marine invertebrates	1,239
Transportation and engineering ..	122	Comparative anatomy:	
Modern pottery, porcelain, and bronzes	12	Mammals (skulls and skeletons) ..	655
Physical apparatus	10	Birds	
Graphic arts	1,326	Reptiles and batrachians	
Ethnology	1,504	Paleozoic fossils	205
American aboriginal pottery	33	Mesozoic fossils	1,488
Prehistoric anthropology	933	Fossil plants	40
Mammals, skins, and alcoholics	465	Recent plants	44
Birds	2,382	Minerals	1,131
Birds' eggs and nests	332	Geology	873
		Total	21,942

It may perhaps interest those who are watching the growth of the national collections, to observe the figures in the following table, which show the number of entries made in the catalogue books of the several departments during the decade now completed, and also during the previous decade—that is, before the occupancy of the Museum building.

Number of entries made in the catalogue books of the National Museum during the decades 1871 to 1880 and 1881 to 1890, respectively.

Year.	No. of cat. entries.	Year.	No. of cat. entries.
1871	5,041	1881	24,470
1872	8,387	1882	26,588
1873	10,704	1883	28,590
1874	10,332	1884	28,195
1875	12,578	1885	26,796
1876	23,675	1886	52,116
1877	11,398	1887	36,695
1878	9,973	1888	26,891
1879	11,552	1889	23,442
1880	14,586	1890	28,293
Total	118,226	Total	332,076

DEVELOPMENT AND ARRANGEMENT OF THE EXHIBITION SERIES.

The growth of the exhibition series in the various departments of the Museum has been greatly retarded on account of the crowded condition of the Museum building.

In the Section of Graphic Arts the labeling of specimens on exhibition has been continued and the cataloguing of the Osborne collection completed. In the Section of Transportation and Engineering an attempt has been made to secure a series of objects illustrating the birth and development of the mechanical arts, with special reference to the evolution of the epoch-making inventions. The labeling and cataloguing of specimens in the exhibition series has been completed. The study and exhibition series have been increased by a collection of engravings, prints, photographs, and drawings of locomotives, cars, bridges, and other railroad apparatus and appliances. In order to provide room for the display of valuable objects acquired during the year, it was found necessary to rearrange the entire exhibition series, and many objects were installed on the tops of cases, or on brackets, with a view to greater economy of space. Considerable progress was made in the Department of Ethnology in connection with the installation of the series of bows, arrows, and shields. An exhibition series of time-keeping apparatus has been commenced, and a card-catalogue of the ethnological series was begun. A series of type portraits of mankind, 33 in number, was prepared by Mr. A. Zeno Shindler. A series of fire-making implements was arranged by Mr. Walter Hough. Preparations were commenced at the close of the fiscal year for an ethnological exhibit at the World's Fair. In the Department of Prehistoric Anthropology the collections have been rearranged according to locality, necessitating a change in the location of the cases and a rearrangement of the material in the trays. Six months were required for the completion of this work. The preparations for an exhibition of mammals at the World's Fair have somewhat retarded progress in the installation and arrangement of the exhibition series. In the Department of Birds five exhibition cases were filled with specimens, properly arranged and labeled, and a large portion of the study collection of American *Passeres* and *Picarie* was entirely rearranged. The installation of the collection of reptiles and batrachians in jars was continued during the year, and the reserve series of North American batrachians was arranged in systematic order. The space assigned to the Department of Vertebrate Fossils is greatly overcrowded, thus preventing a complete arrangement of the study and exhibition series, a large amount of unclassified material being in storage. The Department of Mollusks has shown considerable activity in the development of its exhibition series during the year. The Lea collections have been placed in permanent shape. The Naiades have been placed on exhibition in new cases. The reserve collection in the Department of Insects

has steadily increased, and the exhibition series is now arranged in permanent shape. Additional accommodations have been provided for the Department of Marine Invertebrates, whereby space is provided for seven additional unit cases. The development of the exhibition series will be deferred until the west hall is again ready for occupation. In the Department of Comparative Anatomy the work of labeling the series has been commenced and a tentative plan for a synoptic exhibition series has been arranged. The honorary curator of Paleozoic fossils, Mr. C. D. Walcott, finds it very difficult to handle the large amount of material received, owing to the limited laboratory room, and over 50 boxes of material have been placed in storage in order to obtain room for the collections desired for immediate study. The collection of mesozoic fossils, under the charge of Dr. C. A. White, have been rearranged in cases, and are now in much better condition for examination and study than before. The collection of fossil plants, under the supervision of Prof. Lester F. Ward, honorary curator, has been rearranged geographically during the year, and the series of cretaceous and tertiary specimens have been catalogued. In the Mineral Department a nearly complete rearrangement of the systematic series was carried out during the year by Mr. Wm. S. Yeates, under the direction of Prof. F. W. Clarke, honorary curator. A new case was built across the east end of the west-south range, affording to the Department of Geology accommodations for the collection of structural color and the specific gravity series, as well as for the larger collections in historical geology.

E.—THE MUSEUM STAFF.

THE SCIENTIFIC STAFF.

The personnel of the scientific departments of the Museum has undergone but little change during the last fiscal year.

Capt. J. W. Collins, who has been in charge of the section of naval architecture for several years, has recently been appointed honorary curator of the section of fisheries.

Mr. J. B. Hatcher was temporarily appointed in December as an assistant to Prof. O. C. Marsh, honorary curator of the department of vertebrate fossils, for the purpose of arranging and classifying the collection which has now been transferred to the Museum.

Mr. Frederick C. Test, a graduate of Indiana State University, was appointed an aid in November, 1890, to assist Dr. Stejneger, in the department of reptiles and batrachians.

There are now thirty-three organized departments and sections in the Museum under the care of curators, including honorary and acting curators, and assistant curators,

LIST OF CURATORS, ASSISTANT CURATORS, AND AIDS:

- Arts and Industries:** Dr. G. BROWN GOODE, Honorary Curator.
Materia Medica: Dr. JAMES M. FLINT, U. S. Navy, Honorary Curator.
Animal Products: Mr. R. EDWARD EARLL, Acting Curator.
Naval Architecture: Capt. J. W. COLLINS, U. S. Fish Commission, Honorary Curator.
Fisheries: Capt. J. W. COLLINS, U. S. Fish Commission, Honorary Curator.
Foods: Prof. W. O. ATWATER, Department of Agriculture, Honorary Curator.
Historical Collections, Coins and Medals: Mr. A. HOWARD CLARK, Curator.
Transportation and Engineering: Mr. J. E. WATKINS, Curator.
Oriental Antiquities: Prof. PAUL HAUPT, Johns Hopkins University, Honorary Curator; Dr. CYRUS ADLER, Johns Hopkins University, Assistant Curator.
Graphic Arts: Mr. S. R. KOEHLER, Boston Museum of Fine Arts, Acting Curator.
Forestry: Dr. B. E. FERNOW, Department of Agriculture, Honorary Curator.
Physical Apparatus: Mr. W. C. WINLOCK, Honorary Curator.
Ethnology: Prof. OTIS T. MASON, Curator; Mr. WALTER HOUGH, Assistant.
American Prehistoric Pottery: Mr. WILLIAM H. HOLMES, Bureau of Ethnology, Honorary Curator.
Prehistoric Anthropology: Dr. THOMAS WILSON, Curator; Mr. E. P. UPHAM, Assistant.
Mammals: Mr. FREDERICK W. TRUE, Curator.
Birds: Mr. ROBERT RIDGWAY, Curator.
Birds' Eggs: Capt. C. E. BENDIRE, U. S. Army, Honorary Curator.
Reptiles and Batrachians: Dr. LEONARD STENEGER, Curator.
Fishes: Dr. TARLETON H. BEAN, U. S. Fish Commission, Honorary Curator; Mr. BARTON A. BEAN, Assistant Curator.
Vertebrate Fossils: Prof. O. C. MARSH, Yale College, Honorary Curator; Mr. FREDERIC A. LUCAS, Assistant Curator.
Mollusks: Mr. WILLIAM H. DALL, U. S. Geological Survey, Honorary Curator; Dr. R. E. C. STEARNS, Adjunct Curator.
Insects: Prof. C. V. RILEY, Department of Agriculture, Honorary Curator; Mr. MARTIN L. LINELL, Aid.
Marine Invertebrates: Mr. RICHARD RATHBUN, U. S. Fish Commission, Honorary Curator; Mr. JAMES E. BENEDICT, Assistant Curator.
Comparative Anatomy: Dr. FRANK BAKER, Honorary Curator; Mr. FREDERIC A. LUCAS, Assistant Curator.
Invertebrate Fossils:
Paleozoic: Mr. C. D. WALCOTT, U. S. Geological Survey, Honorary Curator.
Mesozoic: Dr. C. A. WHITE, U. S. Geological Survey, Honorary Curator.
Cenozoic: Mr. WILLIAM H. DALL, U. S. Geological Survey, Honorary Curator.
Fossil Plants: Mr. LESTER F. WARD, U. S. Geological Survey, Honorary Curator; Mr. F. H. KNOWLTON, Honorary Assistant Curator.
Botany: Dr. GEORGE VASEY, Botanist of the Department of Agriculture, Honorary Curator.
Minerals: Prof. F. W. CLARKE, Chief Chemist, U. S. Geological Survey, Honorary Curator; Mr. WILLIAM S. YEATES, Assistant Curator.
Geology: Mr. GEORGE P. MERRILL, Curator; Mr. W. H. NEWHALL, Aid.

THE ADMINISTRATIVE STAFF.

No changes in the administrative departments have been made during the year. In the office of the assistant secretary, Mr. R. E. Earll, has been engaged on special duty connected with the Smithsonian exhibit for the World's Fair.

The department of accounts and supplies is still under the charge of Mr. W. V. Cox, chief clerk. A statement of the work of this department will be found on page 68.

The division of correspondence and reports is under the charge of Mr. R. I. Geare. A brief statement relating to the work of this department will be found on page 73.

Mr. S. C. Brown, registrar, is in charge of registration and storage. A report of his work will be found on page 35.

Mr. A. Howard Clark has continued his work as editor of "Proceedings" and "Bulletin" of the Museum. He also has charge of the preparation and printing of labels.

The Museum library is under the care of Mr. John Murdoch. A detailed statement of its operations for the year will be found on page 42.

The superintendent of the Museum, Mr. Henry Horan, with Mr. Charles A. Stewart as assistant superintendent, continues in charge of the mechanics and laborers of the Museum. On page 75 may be found a statement of the principal items of work performed by the force of mechanics and laborers.

LIST OF THE OFFICERS AND EMPLOYÉES OF THE NATIONAL MUSEUM,
JUNE 30, 1891.

SCIENTIFIC STAFF.

Secretary, Smithsonian Institution,

S. P. LANGLEY.

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

G. BROWN GOODE.

Curators.

Frederick W. True.
Robert Ridgway.
O. T. Mason.
G. P. Merrill.
Thomas Wilson,
A. Howard Clark.
Leonhard Stejneger.
S. R. Koehler.

Honorary Curators.

W. O. Atwater.
Frank Baker.
T. H. Bean.
Capt. C. E. Bendire, U. S. A.
F. W. Clarke.
J. W. Collins.
W. H. Dall.
Dr. J. M. Flint, U. S. N.

Honorary Curators—Continued.

B. E. Fernow.
Paul Haupt.
W. H. Holmes.
O. C. Marsh.
Richard Rathbun.
C. V. Riley.
R. E. C. Stearns.
George Vasey.
C. D. Walcott.
L. F. Ward.
C. A. White.
W. C. Winlock.

Assistant Curators.

Frederic A. Lucas.
J. E. Benedict.*
W. S. Yeates.
B. A. Bean.

* Temporary.

Aids.

H. Gibb.*
 O. A. Peterson.*
 M. L. Linell.
 Walter Hough.
 P. L. Jony.

Aids—Continued.

C. T. Simpson.
 F. C. Test.*
 Th. Holm.*
 Oscar Hinrichs.*
 A. H. Brown.

CLERICAL STAFF.

Chief Clerk.

W. V. Cox.

Chiefs of Divisions.

Randolph I. Geare.
 S. C. Brown.
 A. Howard Clark.

Engineer of Property.

J. E. Watkins.

Disbursing Clerk.

W. W. Karr.

Finance Clerk.

W. H. Kimball.

Department Clerk.

J. M. Noah.

Assistant Librarian.

N. P. Scudder.

Property Clerk.

J. S. Goldsmith.

Storekeeper.

E. R. Todd.

Document Clerk.

A. R. Sheriff.

Clerks.

E. P. Upham.
 C. H. James.
 W. H. Newhall.
 T. R. Turnbull.
 A. F. Adams.
 Mrs. H. W. Burnside.
 E. E. Whiting.
 Miss L. B. Gallaher.
 Miss M. L. Stone.
 Miss M. J. Rathbun.
 Miss Edith Perry.*

Clerks—Continued.

Miss N. H. Smith.*
 J. L. Willige.*
 Miss M. E. de Ronceray.
 Miss S. E. Latham.
 Miss S. S. Atkinson.
 M. S. Diggs.
 W. J. Rhees.
 J. S. Sessford.
 Miss L. D. Tabler.
 Miss M. C. Dyer.*

Draftsmen.

W. H. Chandlee.
 W. H. Burger.*

Copyists.

Miss K. A. Gallaher.
 Thomas Marron.
 H. B. Stimpson.
 Miss E. M. Marbury.
 Lorraine Tracy.*
 Miss C. Rosenbusch.
 Mrs. E. C. Montis.*
 Mrs. F. E. Malone.*
 Miss C. L. Hurlbut.*
 Miss Carrie Cornell.*
 S. H. Bond.
 Miss N. C. Beard.
 H. N. Spottswood.*
 Miss Alice Macfarland.*
 Miss M. A. Yeatman.*

Photographer.

T. W. Smillie.

Artist.

A. Zeno Shindler.

Taxidermists.

Joseph Palmer.
 J. W. Scollick.
 Henry Marshall.
 A. H. Forney.
 N. R. Wood.*

* Temporary.

Preparators.

J. C. Proctor.
T. W. Sweeney.
C. R. Luscombe.*
G. C. Neale.

Superintendent.

Henry Horan.

Assistant Superintendent.

C. A. Stenart.

Engineer.

J. H. Parkhurst.

Carpenters and Cabinetmakers.

R. L. Reed.
Henry Bushing.
W. H. Haney.
R. W. Ryan.
C. B. Nichols.
I. N. Bayne.
T. P. Deery.
William Duffy.
E. G. Harbour.
E. Thornburg.

Painters.

C. A. D. Woltz.

Watchmen.

W. M. Ashley.
A. Skimmer.
James Gant.
W. H. Brelsford.
J. H. Brown.
R. A. Calvert.
J. J. Desmond.
Peter Dunne.
G. W. Field.
C. H. Holmead.
J. E. Hoover.
J. H. Horan.
F. D. Queen.
W. W. Wallingsford.
J. W. Westfall.
J. F. Wilson.
G. W. Woltz.
J. F. Gatton.
M. B. Pollock.

Firemen.

W. E. Beagle.
B. W. Burdine.
J. W. H. Wood.

Skilled Laborers.

R. D. Graham.
G. C. McClain.*
F. I. Offutt.
Mark Mayforth.*
A. B. Thorn.
Joseph Berres.*
Peter Burger.*
W. B. Cooper.
H. C. T aylor.*

Laborers.

John Cahill.
W. F. Bannister.
William Chase.
R. Hill.
John Laws.
B. L. Phillips.
Charles Scott.
George White.
Patrick Ford.
J. T. Harris.
H. E. Harris.
Benjamin Buckner.*
Thornton Dean.*
Isaac Lyles.
George F. Redman.
T. W. Reese.
Oliver Roan.*
Frederick Williams.*
J. M. Barrett.

Messengers.

Paul Brockett.
David Twine.
C. S. Wright.
C. W. Diggs.
A. C. Irvine.*
G. C. Moore.
J. E. Wingate.*

Attendants.

Mrs. M. A. Piper.
Mrs. Harriet Wasse m.

Cleaners.

Mrs. Anastasia Coyle.
Mrs. A. V. Hess.
Mrs. M. J. Gregory.
Miss Kate Posey.
Mrs. S. E. Frankland.*
Mrs. Kate Hammersley.*

* Temporary.

F.—REVIEW OF WORK IN THE SCIENTIFIC DEPARTMENTS.

DIVISION OF ANTHROPOLOGY.

ETHNOLOGY.

Progress in this department during the year has been very satisfactory, under the guidance of Prof. Otis T. Mason, curator. Lieut. T. Dix Bolles, U. S. Navy, was detailed for duty at the museum for five months, and rendered material aid in arranging and cataloguing specimens from Oceania. Valuable additions to the collection from Oceania were sent by Admiral Kimberly and Lieut. Safford, U. S. Navy. A card-catalogue of the large collections of religious objects, secured among the pueblos of the southwest by the Bureau of Ethnology, was completed during the year. These collections were labeled by Mrs. Tilly E. Stevenson, and are probably the largest and most complete of any relating to the subject of Pueblo religion. The "artillery" of the American aborigines has been worked up during the year, the linguistic stocks of the aborigines have been fully studied out, and the location of each tribe marked upon a map. An exhibition series of time-keeping apparatus has been commenced, and a complete card-catalogue of the ethnological series was continued during the year. Monographic catalogues, based on the plan of those published by the South Kensington Museum, have also been commenced.

The curator has devoted considerable time to preliminary work in connection with an ethnological exhibit at the World's Columbian Exposition. It is proposed to illustrate in an effective manner the aboriginal life of North America at the time the natives were first visited by the white people, and before they were influenced by contact with our civilization. The number of specimens added to the collection during the year is 1,800. In the catalogue of the department 1,504 entries have been made.

PREHISTORIC ANTHROPOLOGY.

The most important work of the year reported by the curator, Dr. Thomas Wilson, has been the reclassification and rearrangement of the entire collection according to locality. Special researches in many directions have been prosecuted, including the following subjects: Copper implements, jade implements, arrow-heads, casts and models of the Aztec and Maya antiquities. Several important accessions have been received during the year, and are referred to elsewhere in this report. The number of specimens received during the year was 5,504. In the catalogue 934 entries have been made.

GRAPHIC ARTS.

In the section of graphic arts the accessions, while not as numerous as in previous years, have been quite as important. Among the most valuable gifts is a series of specimens fully illustrating the photographic

processes invented by Mr. J. W. Osborne; a collection of Japanese color-prints and illustrated books, received from Mr. T. Tokuno, Tokio, Japan; and an impression from a heliogravure plate made by Niephton Niepee in 1824. Among the gifts to the collection were also artists' tools and material from F. W. Devoe & Co., New York, and Mr. J. M. Falconer, Brooklyn, N. Y. During the year the cataloguing of the Osborne collection was completed.

The number of catalogue entries made during the year was 1,326, the total number of specimens received being about 1,500, embracing 952 specimens in the Osborne collection received several years ago. The entries representing entirely new material are 374 in number. The Bibliography (Section IV) contains notices of the papers, published by Mr. Koehler during the year.

FORESTRY.

Dr. B. E. Fernow, honorary curator, reports that the forestry collections are being gradually increased by gifts. A systematic display of the more important lumber trees by means of maps, showing their distribution, photographs of typical trees, and photomicrographs of the structure of the wood, has been begun. The most valuable accession during the year was a very complete collection of the woods of the Argentine Republic, donated by the Museo de Productos Argentinos at Buenos Ayres.

AMERICAN PREHISTORIC POTTERY.

Mr. W. H. Holmes, of the U. S. Geological Survey, is in charge of this department. The most important accession during the year was a collection of pottery fragments transmitted by the Bureau of Ethnology. The researches conducted by the curator relate mainly to collections made by the Bureau of Ethnology during the past few years in the Mississippi Valley and along the Atlantic Coast. They will be embodied in a forthcoming volume of "Contributions." References are made in the Bibliography (Section IV) to papers published by the curator during the year, relating to excavations in an ancient soapstone quarry in the District of Columbia and to the Thruston Tablet. The catalogue entries for the year were 820 in number.

PHYSICAL APPARATUS.

The nucleus of the collection of physical apparatus consists chiefly of pieces procured by Prof. Henry for researches in electricity and sound. This collection is in charge of Mr. W. C. Winlock, honorary curator. The principal accession is a collection of ancient watch-movements obtained by Mr. S. P. Langley, secretary of the Smithsonian Institution, during a visit to London and Paris in the summer of 1890. A collection of old surveying instruments was received from the surveyor-general of Florida through the General Land Office of the

Department of the Interior. These instruments are supposed to have been used in laying the boundary line between Florida and Georgia in 1795.

HISTORICAL COLLECTIONS.

Mr. A. Howard Clark is in charge of these collections. The most important accessions during the year are the original plaster model of the Statue of Liberty from which was cast the bronze statue surmounting the dome of the Capitol, and a large collection of personal papers and relics of George Washington, including the original will of John Washington. Several historical objects have been submitted for an expression of opinion as to their historical and intrinsic value.

COLLECTION OF DOMESTIC ANIMALS.

The work of mounting typical specimens of domestic animals has been continued by Mr. Nelson R. Wood, 69 specimens being mounted during the year. Nearly all the specimens were difficult subjects, requiring a great deal of time for their preparation. At the close of the year covered by this report, 44 specimens of thoroughbred domestic pigeons and fowls had been collected.

TRANSPORTATION AND ENGINEERING.

These collections, under the custody of Mr. J. E. Watkins, curator, have been materially increased during the year, many valuable accessions having been received. The collection of electrical apparatus has been enriched by the receipt from Miss Mary Henry of the original electro-magnetic engine designed by Prof. Joseph Henry. This machine is one of the earliest applications of magneto-electricity to the production of power. Prof. Henry described its action as "reciprocating motion produced by magnetic attraction and repulsion." Several drawings and lithographs of the original telegraph instrument invented by Mr. Alfred Vail were deposited by his widow, together with two letters, describing Mr. Vail's relations with Prof. Morse and the operations of the first practical electro-magnetic telegraph machine. The Hinds Ketcham Company of Brooklyn, N. Y., deposited a collection of incandescent lamps, switches, and other electric-light apparatus. One of the original cylinders of the "Stourbridge Lion" has been deposited in the Museum, by Lindsay and Early, of Carbondale, Pa.

The ceremonies attending the celebration of the beginning of the second century of the American patent system were held in Washington, on the 8th, 9th, and 10th of April, 1891. Mr. Watkins was appointed secretary of the organization and devoted considerable time to the work of the Congress. During the Patent Centennial a loan collection was installed in the Museum embracing machines of antique design, models, and early patents. Many of the objects forming this collection have found a permanent place in the Museum collections.

The study and exhibition series have also been increased by a large collection of engravings, prints, photographs, and drawings of locomotives, cars, and track-standards, bridges, and many original rail-sections, deposited by Mr. Watkins.

MATERIA MEDICA.

Dr. James N. Flint, U. S. Navy, honorary curator, reports that the work of arranging, installing and providing the specimens with descriptive labels, has been systematically continued. With the exception of the collection of medicines of the North American Indians and Chinese and Japanese drugs, every specimen now has a printed descriptive label. There were 168 specimens received during the year, principally donations from Messrs Powers & Weightman, Philadelphia, and Parke, Davis & Co., of Detroit. Novel and interesting additions were made to the botanical illustrations, consisting of herbarium specimens of indigenous medical plants, not otherwise illustrated. These were prepared by Mr. Theodore Holm, of the Museum staff.

DIVISION OF ZOÖLOGY.

MAMMALS.

Mr. Frederick W. True, curator, reports a gratifying increase in the number of valuable mammals from foreign countries. New storage-cases for the reserve series of alcoholics and small skins have been constructed. Dr. W. L. Abbott presented 76 mammals, collected by him in Africa. Among American mammals the most interesting accession of the year was a male walrus from Walrus Island, Bering Sea, obtained by Capt. W. C. Coulson, of the U. S. Revenue Marine Service. A large sea-lion and numerous specimens of fur-seals, marmots, shrews, and Arctic foxes were obtained during the expeditions of Messrs. H. W. Elliott and William Palmer (of the Museum staff) from the Pribylov Islands. Thirty-two specimens were transferred to the Museum from the Zoölogical Park during the year, including a Rocky Mountain sheep, a bison, black bear and ocelot.

Mr. P. L. Jouy, of the Museum staff, made collections of small mammals in the Roan Mountain region of North Carolina and in southern Arizona. Several groups of mammals have been placed in the exhibition hall during the year, the most conspicuous being a group of East African Guereza monkeys, constructed from skins collected by Dr. W. L. Abbott in the region of Kilima-Njaro, Africa; a group of Borneo gibbons has been prepared, and is now awaiting the construction of a suitable exhibition case. The reconstruction of the south entrance of the Museum building as a storage room and laboratory was completed in September, 1890. Preparations for an exhibit of mammals at the World's Columbian Exposition were begun in March. The force of

taxidermists was increased and a special workshop was fitted up for their use. Mr. William Palmer has been appointed chief taxidermist.

The mammal collections are, on the whole, in a good state of preservation. The number of specimens received during the year was 465.

BIRDS.

The increase in the collections in this department during the year has been most gratifying. The Eighth Congress of the American Ornithologists' Union was held in Washington in November, 1890. The office of the curator of birds—Mr. Robert Ridgway—was used as the headquarters for the members and the meeting-place of several committees, especially that on species and subspecies. Plans and estimates for an exhibit of birds at the World's Columbian Exposition were prepared and submitted by the curator.

The total number of specimens added to the collection during the year was 2,478, and of catalogue entries, 2,383.

Mr. H. Nehrling, of Wisconsin, has published the first part of his work on "North American Birds," many of the illustrations being taken from plates in the reports of the National Museum.

BIRDS' EGGS.

The collection of birds' eggs and nests remains in the custody of Capt. Charles E. Bendire, U. S. Army, honorary curator. Among the more important accessions during the year is an interesting collection of eggs and nests, the gift of Mr. R. MacFarlane, of the Hudson Bay Company. The number of eggs of North American birds in the collection is now 45,031, and of foreign birds, 4,561. The number of nests in the reserve and exhibition series is 2,574, making a total of 52,166 specimens of eggs and nests in the collection.

REPTILES AND BATRACHIANS.

The year covered by this report is reported by Dr. Leonhard Stejneger, curator, as one of unusual activity. The principal accessions received were a collection of reptiles made by Mr. P. L. Jony, the study of which will probably result in greatly increasing and correcting existing knowledge of the herpetology of the southwestern border; a valuable collection of reptiles from Idaho contributed by Dr. C. Hart Merriam, of the Department of Agriculture. Of the exotic collections none exceed in importance those received from Dr. W. L. Abbott, and collected by him in the Seychelles, Madagascar, and Kilima-Njaro region, East Africa. In addition to his other duties, the curator has assumed the editorship of the supplement to the "Nomenclator Zoölogicus." The titles of papers published during the year by Dr. Stejneger will be found in the Bibliography (section IV, of the report).

During the year 908 specimens have been added to the collection,

FISHES.

Dr. Tarleton H. Bean is still the honorary curator of this department, with Mr. Barton A. Bean as assistant. The number of specimens received during the year is 4,737. Prominent among them is a collection of deep-sea fishes from the Mediterranean Sea, received from the Museum of Natural History in Paris, France. The U. S. Fish Commission has transmitted a collection of fresh-water fishes from Arkansas, Alabama, Georgia, Colorado, and Utah, made by Profs. David S. Jordan, S. E. Meek, C. H. Bollman, and Bert Fessler; a collection containing 16 new species obtained by the steamer *Albatross* from the Pacific coast; a collection made by the *Albatross* in 1887-1888 at Bahia, Patagonia, and the Straits of Magellan, and a collection from Chesapeake Bay made by Messrs. Barton A. Bean and P. Seal.

VERTEBRATE FOSSILS.

This department is in charge of Prof. O. C. Marsh, honorary curator, and Mr. Frederic A. Lucas, assistant curator. Few accessions were received during the year. Twenty-seven specimens were mounted for exhibition. The large and valuable series of western fossils received from Prof. O. C. Marsh is being arranged and classified. The collection now embraces 1,080 specimens, many of them being of great value. A large amount of unclassified material is still in storage.

MOLLUSKS (INCLUDING TERTIARY FOSSILS).

Mr. William H. Dall, of the U. S. Geological Survey, is still in charge of this department, and is assisted in the scientific work by Dr. R. E. C. Stearns, as adjunct curator, and by Mr. Gilbert D. Harris and Mr. Frank Burns, of the U. S. Geological Survey. The general operations of this department have been confined to the determining, labeling, assorting, and registration of specimens, and to the preparation of special reports on collections received from the U. S. Fish Commission, the Navy Department, the Revenue Marine Service, the Department of Agriculture, and from special expeditions. The collection of mollusks in the National Museum now ranks among the most important in the world, especially by reason of the scientific data associated with the material and the thorough system of registration and identification which has been applied to the specimens. Mr. Dall has been largely engaged in preparing a general report on the Neocene formations of the United States. Dr. Stearns has devoted much of his time to an investigation of the mollusks of the Galapagos Islands, and the manuscript is nearly ready for publication.

The amount of material received during the year is considerably greater and more valuable than during last year. An interesting collection of marine shells from Caracas, was presented by Mr. R. L. Bartleman, of the United States legation in Venezuela. The Department of

Agriculture sent land and fresh-water shells gathered by its agents in Arizona. The U. S. Fish Commission contributed several collections from the Pacific coast and from the coast of Labrador.

During the year the entire Lea collection has been registered. The bibliographical notices under the names Dall, Simpson, and Stearns (see Section IV) will indicate the extent and character of the researches made in this department during the year.

About 5,000 specimens were received during the year, making a total of about 465,500 specimens now in the collection. The catalogue entries for the year were 5,764 in number.

INSECTS.

Twelve thousand specimens have been added to the collection during the year. The routine work has been confined to the making up of collections for exchange, the naming of specimens for collections, and the arranging of all the collections in permanent shape. The North American Myriapoda have been rearranged. This collection includes the Bollman collection, which was purchased by the Museum last year, and which ranks as the largest in existence. It contains 160 named species, arranged in 325 alcoholic vials. Among the important accessions of the year are: A collection representing about 63 species of insects of various orders, collected in Angola and St. Thomas, Africa, and presented by Mr. Heli Chatelain, of Washington, D. C.; a large collection of African insects, collected and presented by Dr. W. L. Abbott, Philadelphia, Pa.; 425 specimens of Lepidoptera and 2,400 specimens of Coleoptera collected in California and Washington by Mr. A. Koebele, and received from the Department of Agriculture; 1,100 specimens, representing 240 species of North American Microlepidoptera, also transmitted by the Department of Agriculture. The number of catalogue entries for the year was 174. The collections are in a very satisfactory condition.

MARINE INVERTEBRATES.

Favorable progress is reported in the work of this department by the honorary curator, Mr. Richard Rathbun. The construction of a new roof over the west hall of the Smithsonian Institution has necessitated the temporary removal of the greater part of the collection stored there. The number of specimens has been considerably increased by additions from various sources. The work of the department has been actively carried on by Mr. James E. Benedict, assistant curator, and Miss M. J. Rathbun. Mr. Benedict accompanied the U. S. Fish Commission steamer *Fish Hawk* for three months, while making surveys of oyster-beds in Long Island Sound and on the coast of North Carolina. The number of accessions recorded was 32, embracing 6,750 specimens. The contributions made by the Fish Commission included 56 species of Brachyurans and Anomourans, dredged by the Fish Commission

steamer *Albatross*, chiefly in the Pacific Ocean; a collection of Brachyurans, obtained by the U. S. Fish Commission schooner *Grampus*, from the Gulf of Mexico; a large series of specimens of the genus *Panopeus*. Large and valuable collections were also received from the British Museum, London; the Imperial Museum of Natural History, Berlin; the Royal Zoölogical Museum, Copenhagen; Dr. E. A. Andrews, of Johns Hopkins University, Baltimore, Md.; and Prof. H. A. Ward, Rochester, N. Y. Several sets of duplicate specimens for exchange and for distribution to educational establishments were prepared and sent out. Mr. Benedict, assisted by Miss Rathbun, has continued his studies upon the Brachyurans and Anomourans. This collection is one of the largest and most important of the kind that has ever been brought together. It represents all parts of the world, and is especially rich in forms from the coasts of the United States.

COMPARATIVE ANATOMY.

The curatorship of this department has been transferred to Dr. Frank Baker, who, owing to the duties of his position as acting manager of the National Zoölogical Park, is at present unable to devote any time to its work. The management of the affairs of the department has therefore devolved upon Mr. Frederic A. Lucas, assistant curator. A considerable portion of his time has been devoted to the preparation of a plan for a synoptic exhibition series of invertebrates. The mounting and installation of specimens has also been pushed forward. He has made a study of the osteology of the family *Paridae* and some of its allies. Mr. Lucas has also studied the osteological and other anatomical characters of the *Trochilidae*, and the results are incorporated with the paper on Humming birds, prepared by Mr. Ridgway, curator of birds, and published in the Museum report for 1890.*

The most important accessions during the year were a small collection of North Bornean birds, and a collection of birds from the Pribylov Islands.

During the year 655 specimens were added to the collection.

FOSSILS (PALEOZOIC).

From the report of Mr. C. D. Walcott, honorary curator, the year's work shows much progress, both in the development of the collection and the installation and labeling of specimens. A large amount of material has been received from the U. S. Geological Survey. Two important accessions were obtained during the year from the Geological Survey of Sweden, and from Mr. Thomas Ruddy, of Wales. The latter collection is from the Bala series of rocks. The number of entries during the year was 215, comprising 615 specimens. Notices of the papers published during the year by the curator and others attached to this department, and based upon Museum material, will be found in the Bibliography (Section IV).

* Pages 253-383.

INVERTEBRATE FOSSILS (MESOZOIC).

Dr. C. A. White, of the U. S. Geological Survey, is still in charge of this department as honorary curator. His connection with the Survey renders it impossible for him to devote much of his time to Museum work. The collection of this department is steadily increasing, and is now in better condition for examination and study than hitherto. It has not yet been found practicable to separate the specimens into reserve, duplicate, and exhibition series.

During the year, 1488 entries, embracing 8,449 specimens, have been made in the catalogue.

DIVISION OF BOTANY.

FOSSIL PLANTS.

Prof. Lester F. Ward, of the U. S. Geological Survey, continues to act as honorary curator of this department. He states that the work of the year has been chiefly confined to the installation and care of specimens, the collection being now in excellent condition for study. The most important accessions are a collection of Dakota plants, sent by Prof. F. H. Snow, of the University of Kansas, and the collection given by Capt. Charles E. Bendire, comprising 700 specimens. Mr. David White, assistant, has been engaged in work on the carboniferous plant collections and in preparing a bibliography of paleobotany. Mr. Charles S. Prosser has devoted his time largely to the preparation of a paleo-botanical species index. Mr. F. H. Knowlton, assistant curator, made collections of fossil wood and plant-remains in the Gallatin Valley, Montana. He has also continued his studies on fossil wood, and has in preparation a paper on paleozoic woods. Prof. William M. Fontaine, of the University of Virginia, has completed his studies of the Potomac flora.

RECENT PLANTS.

There has been considerable growth in this department during the year, the number of mounted sheets added to the National Herbarium being 50 per cent more than during last year. Dr. George Vasey, Botanist of the Department of Agriculture, continues his valuable services as honorary curator of the National Herbarium. Dr. Vasey has been assisted by Mr. Fred. Coville, who has made many valuable collections in the field, and has also materially aided in the work of arranging and classifying specimens. The accessions received during the year number 622, including a most valuable collection of 10,000 specimens gathered by Edward Palmer in western Mexico, from the States of Sonora and Colima; a collection of 1,740 specimens from the Death Valley region of California, from Arizona, and Nevada, obtained by Mr. Coville and Mr. Frank Funston; a large collection of mosses and

hepaticæ, numbering over 2,000 specimens, from Dr. L. M. Underwood, and a collection of 2,318 plants from Minnesota, transmitted by Dr. G. H. Sandberg. The total number of plants received during the year from all sources was 40,963. This number, added to 39,654, which represents the total number of specimens received in the Museum up to June 30, 1890, gives the total number of plants now in the National Museum. The number of specimens mounted and added to the collections during the year is 8,945, and the number of specimens distributed 8,059. A list of the botanical papers published by the curator and by other collaborators will be found in Section IV of this report.

DIVISION OF GEOLOGY.

MINERALS.

The growth of this department, under the honorary curatorship of Prof. F. W. Clarke, chief chemist of the U. S. Geological Survey, has been satisfactory, although no very large additions were made to the collections. The routine work of cataloguing and labeling specimens occupied much of the time of the assistant curator, Mr. W. S. Yeates. A nearly complete rearrangement of the systematic exhibition series was carried out. Only three accessions of great importance have been received, namely, 171 Russian minerals presented by Mrs. Mary I. Stroud; 53 Freiberg minerals received in exchange from the Royal Saxon Mining School; and a superb series of specimens from the Broken Hill mines, in Australia, given by Mr. Walter J. Koehler, and embracing specimens of native copper, native silver, cerussite, cerargyrite, dyscrasite, and chrysocolla. The gem collection of the late Prof. Joseph Leidy, containing about 400 cut stones, was purchased for use in connection with the proposed exhibit of the Museum at the World's Columbian Exposition. The number of entries made during the year was 1,132, including 7,315 specimens.

GEOLOGY.

Work in the department of geology has been largely confined to the economic section, and a rearrangement and classification of the material. The contributions of Mr. J. H. Huntington, Hyde Park, Mass.; Mr. F. W. Crosby, Washington, and Mr. J. P. Iddings, U. S. Geological Survey, were among the most important of those received during the year. A large lot of onyx marble from the newly discovered deposit near Prescott, Ariz., was received from Mr. William O'Neil.

A special feature of the work of this department consists in the identification of specimens sent for examination and report, no less than 132 lots of specimens having been assigned to this department for this purpose during the year.

A change in the method of installation was effected during the year by the introduction of bent-wire brackets, the specimens being inclined at an angle of 60 or 80 degrees,

Owing to the pressure of routine work no special researches have been undertaken by the curator. References to the papers published during the year relating to this department will be found in Section IV of this report. The collections have been frequently consulted by students, and in certain instances material was lent for study.

G.—REVIEW OF THE ADMINISTRATIVE WORK.

REGISTRATION AND STORAGE.

The registrar, Mr. S. C. Brown, has submitted a carefully prepared report of the work accomplished in this department. The total number of incoming packages of all kinds during the year is 33,686, constituting 2,841 entries on the transportation record of incoming packages. Of this number 572 contained specimens for the National Museum, the remainder being intended for the Institution, the Bureau of International Exchanges, the National Zoölogical Park, and the National Museum. The record of outgoing packages for the year has taken up 1,025 entries, embracing 1,967 packages of various kinds. The accession record for the year shows 1,187 entries, in addition to 452 lots of specimens transmitted for examination and report. The index to the lists of specimens sent for "examination and report," and the "department" index to the accession list in Section V of this report, show the disposition of the accessions among the departments of the Museum.

The distribution of ethnological, geological, zoölogical, and other educational institutions has been continued as far as practicable, and 130 educational establishments at home and abroad have been supplied with duplicates from the collections. Numerous exchanges of specimens have been completed. Many applications for mineral and geological specimens still remain unfilled. Duplicate collections of birds' skins, fishes, and rocks are now being prepared for distribution.

The following statement indicates by geographical arrangement the recipients of the duplicate specimens and the character of the material distributed.

GEOGRAPHICAL STATEMENT OF THE DISTRIBUTION OF SPECIMENS DURING THE YEAR ENDING JUNE 30, 1891.

FOREIGN COUNTRIES.

AFRICA.

J. H. Brady, Cape Town: Insects (208 specimens) in exchange. (D.* 6632.)

AUSTRALIA.

Auckland Museum, Auckland, New Zealand: Minerals (71 specimens); mammals (16 specimens); reptiles (11 specimens); birds' skins (10 specimens) in exchange. (D. 6600.)

* "D" refers to the distribution record kept in the registrar's office.

Australian Museum, Sydney, New South Wales: Skin and skull of *Antilocapra americana*; skull of *Bison americanus*, and dried skin of *Lepidosteus osseus* for exchange. (D. 6450.)

AUSTRIA.

Natural History Museum, Vienna: Duplicate marine invertebrates (set 6, London series). (D. 6367.)

CANADA.

University of New Brunswick, Fredericton, New Brunswick: Stone implements (26 specimens); fragments of pottery (6 specimens) in exchange. (D. 6500.)

CENTRAL AMERICA.

National Museum, San José, Costa Rica: Birds' skins (30 specimens) in exchange. (D. 6706.)

ENGLAND.

Henry Balfour, Oxford: Fire-drills (3 models); blow-gun, model of fire-drill, and pottery lamp in exchange. (D. 6366.) (D. 6639.) 5 pieces of Pueblo Indian pottery in exchange. (D. 6691.)

Prof. George S. Brady, Sunderland: Echinoderms and corals (39 specimens) in exchange. (D. 6714.)

British Museum, London: Duplicate marine invertebrates (set 1, London series); ethnological material (one box and 75 specimens) in exchange. (D. 6368.) (D. 6441.) (D. 6638.)

Isaac Earnshaw, Oldham: Fossil plants (22 specimens) in exchange. (D. 6725.)

Hugh Fulton, London: *Folula stearnsii* (4 specimens) in exchange. (D. 6667.)

Edward Lovett, Croydon: Ethnological material (1 box) for exchange. (D. 6442.)

Mason Scientific College, Birmingham: Graptolites for exchange. (D. 6440.)

Royal Gardens, Kew: Ethnological material (11 specimens) for exchange. (D. 6640.)

FRANCE.

Museum at Chalon-sur-Saône: Stone implements (56 specimens); fragments of pottery (50 specimens) in exchange. (D. 6621.)

Museum of Natural History, Paris: Skeleton of *Bison americanus* and 4 birds' skeletons in exchange. (D. 6679.)

GERMANY.

R. Forrer, Strassburg: Specimen of textile from a grave. Gift. (D. 6533.)

Prof. P. Groth, Munich: Rocks (4 specimens in exchange). (D. 6407.)

Royal Saxon Mining Academy, Freiburg, Saxony: Minerals (47 specimens) for exchange. (D. 6423.)

B. Sturtz, Bonn, Prussia: Rocks (93 specimens); rocks (175 specimens) in exchange. (D. 6490.) (D. 6738.)

University of Munich, Munich, Bavaria: Minerals (2 specimens) in exchange. (D. 6776.)

Dr. H. Von Ihering, Hamburg: American Unios (186 specimens) in exchange. (D. 6778.)

Zoölogical Museum; Berlin: Echinoderms (158 specimens) in exchange. (D. 6617.)

ITALY.

H. J. Johnston-Lavis, Naples: Rocks (64 specimens); minerals (18 specimens) in exchange. (D. 6612.) (D. 6625.)

RUSSIA.

A. Lösch, St. Petersburg: Specimen of platiniferous polydymite in exchange. (D. 6422.)

SWEDEN.

Prof. T. M. Fries, Upsala: Dried plants (800 specimens) in exchange. (D. 6487.)
 Royal Swedish Academy, Stockholm: Dried ferns from the United States and Costa Rica (100 species) in exchange. (D. 6505.)

UNITED STATES.

- ALABAMA. Blount College, Blountsville: Duplicate collection of minerals (set 97). Gift. (D. 6745.)
 Jefferson Academy, Jefferson: Duplicate collection of minerals (set 73). Gift. (D. 6461.)
- ARKANSAS. Charles F. Brown, Hot Springs: Amazonstone (200 specimens) for exchange. (D. 6568.)
- CALIFORNIA. Charles R. Orcutt, San Diego: Reptiles (2 specimens) in exchange. (D. 6526.)
- CONNECTICUT. High School, Stamford: Duplicate collection of minerals (set 75). Gift. (D. 6176.)
 Oliver T. Hyde, Ellington: Minerals (20 specimens). Gift. (D. 6733.)
 Prof. William North Rice, Middletown: Rocks (5 specimens) in exchange. (D. 6771.)
 Yale College Museum, New Haven: Minerals (8 specimens). Gift. (D. 6408.)
- DISTRICT OF COLUMBIA. Prof. Cleveland Abbe, Washington: Slab of crocidolite quartz from South Africa, in exchange. (D. 6708.)
 Catholic University, Washington: Cast of Assyrian obelisk, in exchange. (D. 6488.)
 Chevalier Schmit Von Tavera, Austria-Hungary Legation, Washington: Catlinite pipe. Gift. (6482.)
 Mount Vernon Seminary, Washington: Duplicate marine invertebrates (series IV, set 173, and special set as a gift). (D. 6475.)
 National Zoölogical Park, Washington: Living snake (Accession 23337). Gift. (D. 6369.)
 I. C. Russell, Washington: Specimen of thimolite. Gift. (D. 6519.)
 Mrs. H. B. Walcott, Washington: Zuni pottery (4 specimens) in exchange. (D. 6575.)
 Washington High School, Washington: Duplicate collection of minerals (set 85). Gift. (D. 6584.)
- ILLINOIS. Kenwood Physical Observatory, Chicago: Fragments of five meteorites. Gift. (D. 6530.)
 Prof. J. A. Udden, Rock Island: Volcanic dust (6 samples) in exchange. (D. 6694.)
- INDIANA. Charles S. Beachler, Crawfordsville: Echinoderms (97 specimens) in exchange. (D. 6607.)
 High School, Winamac: Duplicate collection of minerals (set 88). Gift. (D. 6622.)
 Indiana Normal University, Evansville: Duplicate collection of minerals (set 71). Gift. (D. 6455.)
 John W. Spencer, Paxton: Duplicate set of marine invertebrates (special set) in exchange. (D. 6402.)

- IOWA. Hamburg Public Schools, Hamburg: Duplicate collection of minerals (set 81). Gift. (D. 6570.)
 Parsons College, Fairfield: Duplicate collection of minerals (set 91). Gift. (D. 6629.)
 Saint Mary's Academy, McGregor: Duplicate collection of minerals (set 69). Gift. (D. 6433.)
- KANSAS. Hartford School, Hartford: Duplicate collection of minerals (set 74). Gift. (D. 6163.)
 Hiawatha Academy, Hiawatha: Duplicate collection of minerals (set 92). Gift. (D. 6364.)
- LOUISIANA. W. H. Jack, Baton Rouge: Specimen of gold on schist for exchange. (D. 6541.)
 Gustave Kohn, New Orleans: Salamanders (4 specimens); salamanders (2 specimens) in exchange. (D. 6605). (D. 6630.) (D. 6729.)
 The Louisiana State University, Baton Rouge: Duplicate marine invertebrates (series IV, set 177). Gift. (D. 6589.)
- MAINE. High School, Bridgton: Duplicate collection of marine invertebrates (series IV, set 174). Gift. (D. 6177.)
 Loren B. Merrill, Paris: Specimen of silver-lead ore; rocks and ores (11 specimens) in exchange. (D. 6507.) (D. 6611.)
 L. H. Merrill, Orono: Specimen of phonolite in exchange. (D. 6540.)
- MARYLAND. Baltimore City College, Baltimore: Duplicate collection of minerals (set 79). Gift. (D. 6195.)
 Baltimore Manual Training School, Baltimore: Duplicate collection of minerals (set 56). Gift. (D. 6373.)
 Loyola College, Baltimore: Duplicate collection of minerals (set 87). Gift. (D. 6597.)
 Frank T. Redwood, Baltimore: Ethnological material (2 specimens); executioner's knife from Africa in exchange. (D. 6464.) (D. 6497.)
- MASSACHUSETTS. William Brewster, Cambridge: Birds' skins (17 specimens). Gift. (D. 6517.)
 Charles B. Cory, Boston: Birds' skins (17 specimens) in exchange. (D. 6518.)
 Harvard University, Cambridge: Cast of the Grand Rapids meteorite. Gift. (D. 6712.)
 High School, Springfield: Duplicate collection of marine invertebrates (series IV, set 179). Gift. (D. 6727.)
 Peabody Academy of Science, Salem: Specimen of Japanese screen in exchange. (D. 6732.)
- MICHIGAN. Albion College, Albion: Duplicate collection of minerals (set 57). Gift. (D. 6376.)
 Battle Creek College, Battle Creek: Duplicate collection of minerals (set 61). Gift. (D. 6388.)
 Detroit College, Detroit: Duplicate collection of minerals (set 62). Gift. (D. 6390.)
 Kalamazoo College, Kalamazoo: Duplicate collection of minerals (set 76). Gift. (D. 6383.)
 Parke, Davis & Co., Detroit: Casts of Easter Island tablets in exchange. (D. 6740.)
- MINNESOTA. Moorhead Normal School, Moorhead: Duplicate collection of minerals (set 66). Gift. (D. 6401.)
- MISSOURI. Maryville Seminary, Maryville: Duplicate collection of minerals (set 95). Gift. (D. 6724.)
 Missouri Valley College, Marshall: Duplicate collection of minerals (set 80), and collection of marine invertebrates (series IV, set 175). Gift. (D. 6547.)
 Missouri Wesleyan Institute, Cameron: Duplicate collection of minerals (set 68). Gift. (D. 6432.)

- MONTANA. Johan B. Koch, Bozeman: Arrow and spear-points (50 specimens) in exchange. (D. 6496.)
- NEBRASKA. Chatauqua Museum, Long Pine: Duplicate collection of minerals (set 65). Gift. (D. 6400.)
- Nebraska Wesleyan University, Lincoln: Duplicate collection of minerals (set 60). Gift. (D. 6387.)
- The High School, Beatrice: Duplicate collection of minerals (set 90). Gift. (D. 6628.)
- NEW HAMPSHIRE. Dartmouth College, Hanover: Lay figure in exchange. (D. 6767.)
- NEW JERSEY. R. T. Tracy, Camden: Porcelain clays (10 specimens) in exchange. (D. 6696.)
- NEW YORK. American Museum of Natural History, New York City: Four skins and skull of *Tamias*; birds' skins (26 specimens) in exchange; Crinoids (1 species). Gift. (D. 6395.) (D. 6524.) D. 6713.)
- Hon. E. G. Blackford, New York City: Framed photograph of American bison. Gift. (D. 6374.)
- Brockport State Normal School, Brockport: Duplicate collection of minerals (set 70). Gift. (D. 6454.)
- Brooklyn Institute, Brooklyn: Specimen of *Pentacrinus decorus*. Gift. (D. 6565.)
- Brooklyn Training School, Brooklyn: Duplicate collection of marine invertebrates (series IV, set 172). Gift. (D. 6416.)
- Brooklyn, Pratt Institute: Collection of photographs. Gift. (D. 6739.)
- Columbia College, New York City: Photo-mechanical process work (86 specimens) in exchange. (D. 6506.) Duplicate collection of marine invertebrates (series IV, set 176). Gift. (D. 6548.)
- George L. English & Co., New York City: Minerals (box) in exchange. (D. 6779.)
- J. Scott Hartley, New York City: 12 casts of Indian heads in exchange. (D. 6535.)
- Homer Academy, Homer: Duplicate collection of minerals (set 82). Gift. (D. 6577.)
- F. Irsch, New York City: Specimen of bowstring hemp: Pita (2 specimens); and flax (3 specimens); in exchange. (D. 6438.)
- New York State Museum, Albany: Ornamental stones (7 specimens) in exchange. (D. 6521.)
- Charles Palm, New York City: Dry specimens of coleoptera in exchange. (D. 6546.)
- Phelps Union School, Phelps: Duplicate collection of minerals (set 63). Gift. (D. 6396.)
- Rochester Free Academy, Rochester: Duplicate collection of minerals (set 67). Gift. (D. 6431.)
- Rochester, Henry A. Ward: Specimen of breastbone of *Rhyntina*, restored (gift); large specimen of sponge collected off Cape Hatteras (exchange). (D. 6601.) (D. 6552.)
- Rushville Union School, Rushville: Duplicate collection of minerals (set 64). Gift. (D. 6397.)
- St. John's Rectory, Syracuse: Minerals (27 specimens). Gift. (D. 6561.)
- M. F. Savage, New York City: Fijian club and Sandwich Island Fly-flapper in exchange. (D. 6493.)
- School of Mines, Columbia College, New York city: Dumortierite in quartz (8 specimens) for exchange. (D. 6516.)
- Skaneateles Free Library, Skaneateles: Duplicate collection of minerals (set 84). Gift. (D. 6579.)
- State Normal and Training School, Cortland: Duplicate collection of minerals (set 83). Gift. (D. 6578.)
- Staten Island Academy and Latin School, Stapleton: Duplicate collection of minerals (set 86). Gift. (D. 6596.)
- The Franciscan Convent, Syracuse: Minerals (28 specimens). Gift. (D. 6580.)
- The Francis Hateb Library, Cortland: Minerals (28 specimens). Gift. (D. 6581.)

- NEW YORK. Rev. H. H. Thomas, Dansville: Minerals (50 specimens) in exchange. (D. 6514.)
 Union Free School, Canandaigua: Duplicate collection of minerals (set 58). Gift. (D. 6378.)
- OHIO. W. S. Burt, Youngstown: Arrow and spear-points (50 specimens) in exchange. (D. 6499.)
 W. H. McGinnis, Youngstown: Arrow-points (5 specimens) in exchange. (D. 6720.)
 Oberlin College, Oberlin: Specimen of bird skin in exchange. (D. 6458).
 Ohio State University, Columbus: Duplicate collection of minerals (set 77). Gift. (D. 6439.)
- PENNSYLVANIA. Oscar A. Burdats, Philadelphia: Specimen of Lancelet (*Amphioxus lanceolatus*). Gift. (D. 6512.)
 Pennsylvania State College, State College: Duplicate marine and fresh-water fishes (90 species), and duplicate set of minerals (set 89). Gift. (D. 6627.)
 W. W. Rockhill, Philadelphia: Ethnological material (3 specimens) in exchange. (D. 6766.)
 Dr. C. M. Stubbs, Wakefield: Arrow and spear-heads (50 specimens) in exchange. (D. 6606.)
 University of Pittsburgh, Pittsburgh: Duplicate collection of minerals (set 59). Gift. (D. 6386.)
 Warren Public Academy, Warren: Duplicate collection of minerals (set 98). Gift. (D. 6751.)
- SOUTH CAROLINA. Prof. H. A. Green, Chester: Minerals and ores (14 specimens) in exchange. (D. 6662.)
- TENNESSEE. Ridgedale Public School, Ridgedale: Duplicate collection of minerals (set 94). Gift. (D. 6652.)
- TEXAS. Fort Worth University, Fort Worth: Duplicate collection of minerals (set 72). Gift. (D. 6456.)
- WEST VIRGINIA. Allegany Collegiate Institute, Alderson: Duplicate collection of minerals (set 78). Gift. (D. 6491.)
- WISCONSIN. William H. Hobbs, Madison: Rocks (44 specimens) in exchange. (D. 6471.)
 High School Museum, Sparta: Duplicate collection of minerals (set 96). Gift. (D. 6731.)
 State Normal School, Milwaukee: Duplicate marine invertebrates (series IV, set 178). Gift. (D. 6651.)
 University of Wisconsin, Madison: Minerals (71 specimens) as exchange. (D. 6515.)
- WYOMING. Wyoming University, Laramie: Duplicate collection of minerals (set 93). Gift. (D. 6637.)

The following table shows the number of specimens distributed from the various departments in the Museum during the year ending June 30, 1891:

Department.	No. of specimens.	Department.	No. of specimens.
Physical apparatus	20	Fishes	90
Graphic arts	86	Mollusks	190
Ethnology	138	Insects *	2, 144
Pottery	9	Marine invertebrates	1, 700
Prehistoric anthropology	293	Fossil plants	8, 059
Mammals	21	Minerals	493
Birds	163	Geology	459
Birds' eggs and nests	2	Total	13, 875
Reptiles and batrachians	14		

* Of this number 1,239 were sent to specialists for study.

In the report for last year (1889-'90) a tabulated statement, similar in character to the preceding table, was inadvertently omitted, and is therefore inserted in this place :

Department.	No. of specimens distributed 1889-'90.	Department.	No. of specimens distributed 1889-'90.
Oriental antiquities	93	Insects	295
Ethnology	340	Marine invertebrates	690
Pottery	9	Paleozoic fossils	12
Prehistoric anthropology	55	Mesozoic fossils	13
Mammals	23	Recent plants	7,951
Birds	589	Minerals	4,430
Reptiles and batrachians	34	Geology	200
Fishes	28	Total	14,874
Mollusks	104		

The registrar has completed an alphabetical index of the distributions since 1874, which includes more than 6,700 shipments. A card catalogue, arranged by names of recipients, has also been prepared, showing the distributions of specimens made to each museum, college or individual. This catalogue is very useful, showing at a glance the relations of this kind which have existed between the National Museum and the establishments referred to on the cards. The file containing the papers relating to the distribution of specimens has been amplified and improved, and is now in excellent condition for reference.

It may be interesting to compare the total amount of distributions made during the decade ending in 1880 with the total for the decade completed last year. These figures are given in the following table, showing an increase of about 60 per cent in favor of the more recent decade:

Total numbers of specimens distributed during the decades 1871 to 1880 and 1881 to 1890, respectively.

DISTRIBUTION OF DUPLICATES.

Year.	No. of specimens.	Year.	No. of specimens.
1871	10,139	1881	13,293
1872	9,880	1882	12,391
1873	15,720	1883	16,270
1874	28,849	1884	21,084
1875 }	4,883	1885	15,000
1876 }		1886	23,987
1877	9,754	1887	11,000
1878	6,426	1888	29,408
1879	8,966	1889	11,382
1880	14,679	1890	14,874
Total	109,296	Total	168,689

*The decrease in the number of specimens distributed during this year is due to the constantly increasing pressure of routine work in the scientific departments and to the inability of the curators to complete the separation of the duplicates for distribution.

LIBRARY.

Mr. John Murdoch, librarian, furnishes the following information regarding the operations of the library during the year:

The total number of publications added to the library during the year was 12,854 (922 volumes of more than 100 pages, 2,492 pamphlets, 9,280 parts of regular serials, and 160 charts). Of these, 424 volumes, 883 pamphlets, and 6,413 parts of serials were retained for the use of the Museum from the accessions of the Smithsonian Institution. The remainder were obtained by gift, exchange, and purchase.

The largest gift to the library during the year was from the Rev. John Croumie Brown, of Haddington, Scotland, and consisted of the professional library of his late brother, Dr. Samuel Brown. Dr. Brown, who has been called "the last of the alchemists," was born in Scotland in 1817. He devoted himself at an early age to the study of chemistry. His attention was especially attracted to the ultimate problems of the science, and he became persuaded that the elements usually regarded as chemically simple and primary were transmutable into each other. He was a poet and essayist as well as a chemist, but his time was chiefly spent in his laboratory, and at the time of his death, in 1856, he believed that he was very near to the point of demonstrating the great fundamental theory, in which his own faith had never wavered. His library, consisting of 150 volumes and 8 pamphlets, contains many rare and valuable old works on chemistry and physics, and will be kept by itself in the library under the name of the "Samuel Brown Collection."

An important donation was received from Dr. Charles A. White, U. S. Geological Survey, honorary curator of the section of mesozoic fossils, consisting of 106 volumes, 82 parts, 50 pamphlets, and 5 maps.

The work of entering and cataloguing the Rau Memorial Library has at last been completed. This collection, as finally catalogued, comprises 1,609 titles.

An excellent beginning has been made on the much-needed subject catalogue. This now consists of 1,838 cards, arranged according to the decimal classification in general use among libraries.

Three new sectional libraries have been added to the list during the year, namely: Aëronautics (authorized by order of the secretary, June 19), in charge of Mr. G. E. Curtis; astronomy, in charge of Mr. W. C. Winlock; and reptiles and batrachians, in charge of Dr. Leonhard Stejneger.

The number of books assigned to the sectional libraries is as follows:

Administration.—203 volumes, 6 parts, 58 pamphlets, and 1 chart.

Aëronautics.—(Now being organized.)

Astronomy.—9 volumes, 580 parts, 3 pamphlets.

Birds.—534 volumes, 252 parts, 49 pamphlets, 5 charts.

Editor.—628 volumes, 538 parts, 46 pamphlets.

Ethnology.—347 volumes, 201 parts, 16 pamphlets, and 1 chart.

Fishes.—87 volumes, 24 parts, 8 pamphlets.

Geology.—522 volumes, 547 parts, 365 pamphlets, and 48 charts.

Insects.—430 volumes, 907 parts, 217 pamphlets.

Mammals.—204 volumes, 310 pamphlets.

Marine Invertebrates.—7 volumes, 44 pamphlets, 118 charts.

Materia medica.—223 volumes, 215 parts, 18 pamphlets.

Mesozoic fossils.—31 volumes, 2 pamphlets.

Mineralogy, A.—183 volumes, 418 parts, 8 pamphlets.

Mineralogy, B.—74 volumes, 69 pamphlets, 1 sheet.

Mollusks and Cenozoic fossils.—105 volumes, 274 parts, 93 pamphlets.

Oriental archaeology.—190 volumes, 398 parts, 112 pamphlets.

Plants, recent and fossil.—331 volumes, 1,437 parts, 261 pamphlets.

Prehistoric anthropology.—62 volumes, 80 parts, and 21 pamphlets, in addition to the Rau Memorial Library of 1,609 titles.

Reptiles and batrachians.—9 volumes, 51 parts, 1 pamphlet. (Partly organized.)

Transportation and engineering.—84 volumes, 438 parts, 4 pamphlets.

It was hoped that Congress would provide for binding the accumulated books belonging to the Museum library, but the appropriation asked for was not granted. The usual application was therefore made to Mr. Spofford, Librarian of Congress, for an order to bind some of the books belonging to the Smithsonian deposit now in use at the Museum, and Mr. Spofford with his usual kindness at once furnished an order for binding 300 volumes. By taking advantage of a time of the year when work at the Government bindery was least pressing, it was possible to have these books away from the library a comparatively short time only.

Mr. N. P. Seudder has made great improvement in the condition of the crowded periodical room. The construction of 480 feet of shelving has enabled him to arrange the books in much more accessible shape, and also to adopt something in the way of a classification, making the finding of periodicals much more convenient than formerly. Nevertheless, the rate of growth of the library is so large that the value of this additional shelf-room is almost neutralized by the greater number of accessions during the year.

SPECIMENS SENT TO THE MUSEUM FOR EXAMINATION AND REPORT* DURING THE YEAR.

A large number of specimens are received every year for examination and report. A record is kept of each package, and when the specimens are considered worthy of addition to the Museum collections, they are so recorded and given an accession number. About 450 lots (797-1247) have been received for examination and report during the fiscal year covered by this report. The specimens are examined by the curator in charge of the department to which they relate, and he submits a statement regarding them, which is forwarded to the sender, or used in preparing a reply. A list is given below:

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pa.: Two specimens of snakes.
(Returned.) 1242 (VI).

* The first number in the items included in this list relates to the record of specimens sent for examination and report. The number in parentheses relates to the record of permanent accessions. The third, in roman, and also in parentheses, relates to the department in the Museum to which the specimen was referred.

- ADAMS, C. F., Champaign, Ill.: Group of shrikes. (Purchased.) 885 (23622) (v, A).
- ALDERSON, W. J., Hartmonsville, W. Va.: Specimen of impure limestone. 1107 (xvii).
- ALEXANDRIA FERTILIZER COMPANY, Alexandria, Va.: Specimen of mineral. 989 (xvi).
- ALLAN, JAMES M., Chicago, Ill.: Specimen of mineral. 909 (xvi).
- ALLEN, H. C., Buckley, Wash.: Specimen of ore from Stark Mine. 1031 (xvii).
- ALPINE PLASTER AND CEMENT COMPANY, Los Angeles, Cal.: Samples of calcareous sand. 921 (xvii).
- AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.: Two skins of *Ammodramus sandwichensis alaudinus*, from British Columbia. (Returned.) 868 (v, A); eleven specimens of Humming birds sent for identification. (Returned.) 944 (v, A).
- ANGEL, L. C., Ridge Spring, S. C.: Two specimens of minerals from South Carolina. 915 (xvi).
- ANTHONY, A. W., San Diego, Cal.: Six specimens, representing five species, of birds from Lower California, California, and Oregon. (Returned.) 861 (v, A); five specimens of an unnamed form of *Junco*, from Mount Wilson, Los Angeles County, Cal. (Returned.) 912 (v, A); specimens of *Passerculus*. (Returned.) 945 (v, A).
- ANTHONY, T. O. T., Norborne, Mo.: Specimen of insect. 1245 (x).
- APPLETON, JOHN W. M., Salt Sulphur Springs, W. Va.: Specimens of mineral. 963 (xvi).
- ATKINSON, Hon. G. W. (See under P. V. Reynolds and J. S. Wilson.)
- AUSTIN, GEORGE, Nashville, Kans.: Specimen of moth. 1177 (x).
- BACKUS, E., Mexico, Mexico: Specimen of mineral. 1226 (xvi).
- BAGSTER, C. B., Vineland, N. J.: Specimen of insect which injures cabbages in Florida. 1175 (x).
- BAILEY, THOMAS P., Springfield, Mo.: Specimens of minerals. 896, 923 (xvi).
- BAKER, M. A., Weston, Oregon: Specimen taken from a well, about 30 feet deep, near Weston. 913 (xvii).
- BALDWIN, H. O., New Waterford, Ohio. Insect. 1216 (x).
- BALL, WILBER W., La Salle, Ill. Specimens of fibers of burdock. 819 (1).
- BALLARD, LEWIS, Lindside W. Va.: Specimens of ores. 1221 (xvii).
- BANTA, W. H., Valparaiso, Ind.: Stone relics. 1096 (iii).
- BARBER, A. W., Tallahassee, Fla.: Specimen of supposed lava from Wakulla Volcano. 798 (xvii).
- BARKER, JOHN W., Washington, D. C.: Specimens of granite. 824 (xvii).
- BARNARD, G. W., Phenix, Ariz.: Fossil teeth and lower jaw sent for determination of species. 852 (xii).
- BARNETT, W. J. B., Nogales, Ariz., specimen of Hawk-moth. 1247 (x).
- BARRINGTON, W. A., Tooele City, Utah. Specimen of rock from Utah. 1024 (xvii).
- BEALE, E. F., Manchester-by-the-Sea, Mass. Specimens of wild flowers from California. (Returned.) 836 (xv).
- BECKER BROTHERS, Baltimore, Md. Specimen of rock from Blue Ridge Mountain, near Harpers Ferry. 960 (xvii).
- BEDICKIAN, S. V., Washington, Pa. Old coin from Asia Minor sent for identification. (Returned.) 1116 (1).
- BENNETT, RICHARD, Eureka Springs, Ark. Specimen of ore from Arkansas. 1065 (xvii).
- BISHOP, ALEXANDER, Teges, Ky. Through the Department of State, specimens of ore. 1041 (xvii).
- BISHOP, W. L., Kentville, Nova Scotia. Twenty-nine eggs of *Dendragapus canadensis*. (Thirteen eggs purchased, and the others returned.) 895 (23558) (v, B).
- BOGAN, CHARLES, Jamestown, Cal. Chrysalis of insects. 1214 (x).
- BOND, WARREN R., Custer, S. Dak. Two specimens of ores. 1123 (xvii).

- BOERNSTEIN, HENRY N., Washington, D. C. : Three specimens of fossil mollusks from the Mokkatam quarries, Egypt; fossil crustacean from the same locality; shell of supposed oyster from the Libyan Desert, Egypt; 8 specimens of fossilized wood from the petrified forest (?) of Egypt; supposed shell from the Libyan Desert; 2 specimens of the Mediterranean sea-fish, representing the superior and inferior maxillaries; two scarabs from the site of ancient Memphis, with hieroglyphics on the under side; Egyptian antique (blue glaze), representing a mummy, $4\frac{1}{2}$ inches in height; Egyptian antique (black glaze), representing a mummy, $4\frac{1}{2}$ inches in height, and a Roman (?) bronze coin found in Egypt. (Returned.) 1000 (I; II, A; VII; IX).
- BONNEY, DR. A. F., Defiance, Iowa: Piece of ivory (?) found in a bed of gravel-drift in Monona County, Iowa. 1063 (XII).
- BORUFF, G. J., Rhodelia, Tenn.: Specimen of ore from Tennessee. 915 (XVII).
- BOTSFORD, Z. E., Nordmont, Pa.: Specimen of insect from Pennsylvania. 1089 (X).
- BOURLAND, DR. A. M., Van Buren, Ark.: Two specimens of minerals. 817 (XVI).
- BOWMAN, N. W., Massanetta Springs, Va.: Specimen of mineral. 825 (XVI).
- BOWLES, REV. A. C., Abington, Mass.: Specimen of insect. 859 (X).
- BRADY, E. L., Mitchell, Ga.: Indian pipe. Purchased. 943 (23824) (III).
- BRADEN, I., Phebe, Tenn.: Specimen of ore. 1203 (XVII).
- BRITTS, J. H., Clinton, Mo.: Fossil plants. 1121 (XIV).
- BROCK, HERBERT E., Mason City, Iowa: Fossils. 1119 (XIII, A).
- BROOKS, ERVIN, Crown Point Center, N. Y.: Specimen of ore sent for chemical analysis. (Returned.) 1002 (XVII).
- BRUCE, E. C., Winchester, Va.: Specimen of chert from the summit of the limestone ridge adjoining Winchester. 902 (XVII).
- BRYANT, WALTER E., San Francisco, Cal.: Mounted specimen of Humming bird. 917 (V, A).
- BUCKMAN, C. T., West Liberty, Iowa: Two specimens of moths. 1232 (X).
- BURCH, CHARLES E. S., Wenatchee, Wash.: Specimen of ores from Washington. 976 (XVII).
- BÜRGI BROTHERS, Rochester, N. Y.: Relief map of Palestine. (Returned.) 1190 (24475). (II, A).
- BURK, FRANK, Eureka, Utah: Specimen of mineral. 1115 (XVI).
- BUSH, W. R., Lake City, Fla.: Specimen of mineral from Columbia County. 892 (XVI).
- BUTLER, Prof. A. W., Brookville, Ind.: Carboniferous fossils from New Mexico. 1178 (XIII, A).
- CAMERON, MILES T., Flagstaff, Ariz.: Specimen of mineral found in the Grand Cañon of the Colorado. 1149 (XVI).
- CAMPBELL, J. J., Hot Springs, N. C.: Two specimens of minerals. 1198 (XVI).
- CAMPBELL, W. S., Johnson City, Tenn.: Specimens of minerals. 1030 (XVI).
- CAMPFIELD, C. H., Magdalena, N. Mex.: Specimen of ore from New Mexico. 981 (XVII); specimen of mineral found in the Magdalena Mountain, New Mexico. 1050 (XVI).
- CARTER AND ROGAN, Lafayette, Ga.: Specimens of rock from a tunnel in Pigeon Mountain, a spur of Mount Lookout. 922 (XVII).
- CARY, EDWARD A. (See under N. A. Theodorodi.)
- CAVER, J. L., Vernon, Tex.: Specimen of mammal, in the flesh, from Texas. 1182 (IV).
- CESSNA, WILLIAM T., Chicago, Ill.: Specimen of ore. (Returned.) 968 (XVII).
- CHASE, JAMES H., Wenatchee, Wash.: Specimen of clay and specimen of rock from Washington. 974 (XVII); specimen of mineral from the same locality. 1034 (XVI).
- CHESNEY, J. C., Northumberland, Pa.: Specimens of minerals and ores from Pennsylvania. 910, 917, 1015 (XVI, XVII).

- CHICKEY, CHARLES E., Scranton, Miss.: Specimen of caterpillar. 841 (x).
- CISCO, J. G., Jackson, Tenn.: Fossil from the glades of Wayne County, and specimens of smaller fossils from the same locality. 1092 (xiii, a).
- CLAIBORNE, J. H. & SON, Well Spring, Tenn.: Specimen of ores. 1166 (xvii).
- CLARK, GEORGE W., Wyandale, N. Y.: A substance found on the surface of a well. 1006 (xvi).
- CLAUDE, HENRY, Phebe, Tenn.: Specimens of ores. 1129, 1179 (xvii).
- COBB, R. E. C., St. Paul, Minn.: Specimen of bird, in the flesh. 866 (v, a).
- COLLEGE OF SCIENCE, Imperial University, Tokio, Japan (through Dr. J. Ijima): 85 specimens of Japanese birds. (Returned.) 998 (v, a).
- CONNER, I. S., Powell's Station, Tenn.: Two specimens of ore. 1093 (xvii).
- CONWAY, W. B. (See under Montgomery Marble Company.)
- CORNELL, EDWIN, P. M., Pomeroy, Ill.: Concretionary nodule of pyrite from Mercer County. 1066 (xvii).
- CORRY, E. M., Magnolia, Ark.: Specimen of insect. 809 (x).
- COULSON, GEORGE, La Harpe, Ill.: Image found while digging a well in La Harpe; stone found in drift-sand and gravel on Honey Creek, Henderson County, Ill. 994 (iii).
- CUNHA, ANTONIO, Big Pine, Cal.: Specimens of ore from Inis mine, Deep Spring Valley. 1108 (xvii).
- CURRAN, L. R., Adair, Iowa.: Two pieces of bone found in Adair County on a drift 42 feet below the surface. 1001 (xii).
- DABBS, J. R., Chelan, Wash.: Specimens of ore from Washington. 871 (xvii).
- DAHLER, C. H., Helena, Mont.: Specimen of mineral. 929 (xvi).
- DANFORD, W. S., Boulder, Colo.: Specimen of fossil (?) embedded in a hard shale-like substance. 1220 (xvii).
- DANTAGNAN, J. D., New Orleans, La.: Specimen of crab. 1231 (24513) (xi).
- DARLING, JAMES, Alpine, Tex.: Specimens of ores. 844 (xvii).
- DAVIDSON, W. B. M., Kissimmee, Fla.: Tooth found in the phosphate beds in Peace River, near Arcadia, Fla. 874 (iv).
- DAWSON, F. W., Charleston, S. C.: Larvæ of insects. 854 (x).
- DEAN, FRED., Lowville, Pa.: The "Miller axe," found under an oak log in Benton, Ohio. (Returned.) 1067 (iii).
- DIETZ, OTTOMAR, New York City, N. Y.: Two hundred species of North America coleoptera. (Returned.) 993 (x).
- DISMER, H. F. E., Washington, D. C.: Picture found behind the mantel in a house in the city of Washington. 903 (i).
- DODGE, BYRON E., Richfield, Mich.: Stone ax with handle, red stone pipe, and arrow-head. 1056 (24272) (iii).
- DUNCAN, A. L., Dmedin, Fla.: Specimen of caterpillar. 873 (x).
- DUNNELL, L. W., Mulvane, Kans.: Specimen of beetle from Kansas. 1154 (x).
- DURANT, S. W., St. Charles, Ill.: Two specimens of insects. 1185 (x).
- EAST, HENRY, Fredericksburgh, Tex.: Specimen of feather ball, supposed to have been made by insects. 1202 (x).
- ECKERT, J., Newark, N. J.: Insect from Newark. 802 (x).
- ELKINS, S. B., Elkins, W. Va.: Sample of well-water. 850 (xvi).
- EMMERT, J. W., Bristol, Tenn.: Mineral. 937 (xvi).
- ENGLISH, GEORGE L. & Co., New York City, N. Y.: Minerals from various localities. (Returned.) 1155 (xvi).
- EPPLEY, WILLIAM, Zanesville, Ohio: Rocks and clay from Ohio. (Returned.) 1040 (xvi).
- ETCHISON, L. C., Jefferson, Md.: Ten ancient coins, confederate two-dollar note, and specimen of amethyst from Frederick County, 1087 (i, xvi).
- EVERTS, ARTHUR A., Dallas, Tex.: Fern. 1132 (xv).
- FARNHAM, A. B., Benning's, D. C. (through P. A. Ganpon): Stone relief from near Plantsville, Conn. (Returned.) 914 (iii).

- FAUGHT, M. M., Idaho Falls, Idaho: Two specimens of supposed kaolin. 1160 (XVII).
- FERRIS, J. S., Silver Reef, Utah: Mineral. 1042 (XVI).
- FINDLEY, W. R., Hoodspout, Wash.: Ores. 1211 (XVII).
- FISHER, FREDERICK C., Middlesboro, Ky.: Ore from Kentucky. 1011 (XVII).
- FISHER, FREDERICK C. & Co., Middlesboro, Ky.: Minerals from Kentucky. 973 (XVI).
- FISHER, GEORGE W., Alaska, W. Va.: Larva of insect. 865 (X).
- FLECHTER, VICTOR S., New York City, N. Y.: Viola d'Amour from Germany, Hurdy-Gurdy, and a Kit from London. (Purchased.) 957 (23899) (I).
- FLEIG, FRED, Ripley, Ohio: Insect. 1222 (X).
- FLETCHER, L. M., Decatur, Mich.: Luna-moth. 1192 (X).
- FLETCHER, S., Phebe, Tenn.: Three specimens of ores. 815, 906 (XVII).
- FLETCHER, W. A., Rhodelia, Tenn.: Two specimens of ores. 810, 1172 (XVII).
- FLOYD, JOHN E., Helena, Ohio: Moth from Ohio. 1075 (X).
- FOGARTY, Miss LIZZIE, Braidentown, Fla.: Specimen of insect. 955 (X).
- FOGLESONGER, J. M., Shippensburgh, Pa.: Cecropia-moth. 1207 (X).
- FORD, Mrs. MARY E., Hazlehurst, Miss.: Specimen of moth or butterfly. 1128 (X).
- FORRESTER, ROBERT, Schofield, Utah: Specimens of invertebrate fossils from Iron County, Utah. (Returned with one exception.) 1049 (XIII, B). Fossils from Utah. 1168 (XIII, B).
- FOSTER, F. D., Norwalk, Ohio: Copies of 42 photographs of Zulus. 881 (23602). (II-A).
- FOSTER, J. H., Marshall, Va.: Two specimens of minerals from Virginia. 1044 (XVI).
- FOWKE, GERARD, Sidney, Ohio: Quartz "Butterfly gorget," and a shaft-rubber from Monongahela City, Pa.; paleolithic axe from Flint Ridge, and a hematite cone from Augusta, Ky.: 3 small worked flints from Flint Ridge and Ripley, Ohio. 872 (23599) (III).
- FOWLER, Dr. S. MILLS, Gainesville, Tex.: Specimen of chrysalis. 1218 (X).
- FREAD, E. C., Des Moines, Iowa: Concretion (?) found in Iowa. 1086 (XVII).
- FRENCH, CLARENCE E., Jacksonville, Tex.: Mineral. 816 (XVI).
- FRYE, LEVI, Pinkerton, Va.: Minerals. 992 (XVI).
- FUCHS, H. T., Tiger Mills, Tex.: Minerals from Texas. 935 (XVI). (See under P. A. Graves.)
- FULLER, H. DOUGLAS, Winchester, Va.: Sample of clay from Frederic County, Virginia. 1124 (XVII).
- GAME, M. F.: (See under C. R. Richey.)
- GANNON, P. A. (See under A. B. Farham.)
- GARNER, R. L., Roanoke, Va.: Two specimens of minerals from Franklin County. 806 (XVI). (See under Johannes Marjenhoff, and Roanoke Stock Exchange.)
- GARRISON, C. G., Santa Ana, Cal.: Specimens of ore from California. 961 (XVII).
- GARWOOD, SPENCER, Milford Center, Ohio: Shrew. 1082 (IV).
- GHISELIN, Miss H. V., Louisville, Ky.: Two specimens of pottery. (One returned and the other presented). 889 (II, B).
- GIBBONS, J. A., Quijotoa, Ariz.: Sample of Indian paint, and a black stone or shale found in Pima County. 1046 (XVII).
- GILBERT, Mrs. A., Plainfield, N. J.: Twenty-one specimens of lepidoptera. (Returned.) 1022 (X).
- GILBERT, J. E., Mitchell, S. Dak.: Tooth of fossil shark. 1114 (XII).
- GIRDWOODE, WILLIAM, Hospital Corps, U. S. Army, Fort Riley, Kans.: Specimen of moth. 1188 (X).
- GRAVES, P. A., Tiger Mills, Texas (through H. T. Fuchs): Minerals from Texas. 934, 967 (XVI).
- GRAY, S. R. S., East Sound, San Juan County, Wash.: Minerals from Washington. 939 (XVI).
- GREEN, Prof. H. A., Chester, S. C.: Sample of clay. 1098 (XVII).

- GREENEBAUM, W. B., Oakland, Cal.: Minerals from California. 997 (xvi).
- GRIFFITH, FRANK, Glendive, Mont.: Specimens of fossil wood and ores. 1125 (xiv, xvii).
- GROSVENOR, Hon. C. H., House of Representatives: Ore from Pennsylvania. 911 (xvii).
- HAGUE, T. O., New York city, N. Y.: Eleven ethnological paintings and pictures from the Bombay Exhibition. (Returned.) 1146 (ii, a).
- HALLOWELL, Prof. H. C., Sandy Spring, Md.: Mineral from Montgomery County. 933 (xvi).
- HAMILTON, J. T., Spokane Falls, Wash.: Samples of earth. 814 (xvii).
- HAMPTON, ALFRED, El Paso, Tex.: Specimen of work made by a species of silkworm in the Sierra Madre Mountains of old Mexico. 907 (x).
- HARRIS, D. B., Payson, Ariz.: Quartz. 800 (xvii).
- HARRIS, Hon. ISHAM G., United States Senate: Ore. 875 (xvi).
- HARRIS, JOSEPH A., Provo City, Utah: Coal, graphite (?), and minerals. 958, 970 (xvi, xvii).
- HART, WILLIAM H. & Co., New York city: Skin and skull of Lion-slaying Monkey, and Red-fur Monkey. 1074 (24209) (iv).
- HART, WILLIAM R., Camanche, Iowa: Specimens of dendrite from near Camanche, and two specimens from near Silver Cliff, Colo. 918 (23733) (xvi).
- HAZARD, GEORGE W., Los Angeles, Cal.: Rocks from California. 946 (xvii).
- HEACOCK, J. W., Alpine, Ala.: Minerals. 1139 (xvi).
- HEMPEL, ADOLPH., Hillsdale, Mich.: Two skins of Florida Gallinule, from Villa Nova. 1005 (v, a).
- HENSHAW, S. B., Stanardsville, Va.: Ore from Virginia. 984 (xvii).
- HERBERT, Dr. G. H., Beaver City, Utah: Specimens of mineral rock. 877 (xvi).
- HERRING, Mrs. F. O., Plainfield, N. J.: Thirty-one species of North American lepidoptera. (Returned all but one specimen.) 990 (x).
- HESS, R. A., Arkansas City, Kans.: Sample of earth. 1016 (xvii).
- HEWITT, G. C., Rock Springs, Wyo.: Geological material. 1045 (xvii).
- HEYENS, JAMES H., Ogden, Utah: Ores. (Returned.) 1084 (xvii).
- HEYMANN, S., Fayetteville, Tenn.: Ore. 1150 (xvii).
- HILL, FRED. A., Havana, N. Y.: Insect. 1118 (x).
- HILL, L. F., Rico, Colo.: Specimen of madstone. 1023 (1).
- HILL, Dr. W. Scott, Augusta, Me.: Chippings from the material of which arrow and spear-heads are made in the Kennebec Valley. 987 (xvii).
- HILTON, GEORGE, Coral, S. Dak.: Sample of clay from South Dakota. 899 (xvii).
- HILTON, J. W., Acworth, Ga.: Ore. 1101 (xvii).
- HODGE, H. G., York, Ill.: Samples of clay containing shells and sample of sand. 843, 864 (ix, xvii).
- HOLLY, L. B., Biloxi, Miss.: Specimen of ore (?) from near Biloxi. 1131 (xvii).
- HOLMES, J. A., Chapel Hill, N. C.: Specimen of slug. (Returned.) 919 (ix).
- HOMER, F. L., New Hamburg, Pa.: Skin of bird from New Hamburg. 1009 (v, a).
- HOPPING, RALPH, Bloomfield, N. J.: Twenty-six species of North American coleoptera. (Returned). 1008 (x). Thirty-seven specimens of coleoptera. (Returned.) 1020 (x). Beetles from New Jersey. (Returned.) 1068 (x).
- HORNBECK, LEWIS N., Minco, Chickasaw Nation, Ind. T.: Specimen of butterfly. 1171 (x).
- HOUGHTON, C., Batavia, N. Y.: Insect. 838 (x).
- HOVEY, GEORGE U. S., White Church, Kans.: Insect. 1105 (x).
- HUNTER, FRANK, Eureka, Utah: Mineral. 931 (xvi).
- HYDE, J. A., Nephi, Utah: Ores from Utah. (Returned.) 991 (xvii).
- INGERSOLL, J. Z., Lee, N. Y.: Insect. 1137 (x).
- JACOBS, Dr. P. B., Henry, Ill.: Specimen of supposed petrified pear. 801 (xvii).
- JACKSON, THOMAS, Plymouth, Mass.: Sample of earth. 815 (xvii).

- JACKSON, T. H., Westchester, Pa.: Three sets of eggs of *Callipepla squamata castanogastris*, representing 44 specimens. (Purchased.) 894 (23557) (v, B.).
- JARVIS, BURT, Theresa, N. Y.: Specimen of butterfly. 1239 (X).
- JASKE, BROTHER HERMANN, Dayton, Ohio: Small collection of shells from various localities. (Returned.) 879 (IX); collection of shells, 951 (IX); specimens of minerals and shells. (Returned.) 1036 (IX, XVI).
- JOHNSTON, Rev. E. F., Tallula, Ill.: Section of grapevine taken from a coal-shaft 891 (I).
- JONES, GEORGE E., Columbus Grove, Ohio: Specimen of butterfly. 1134 (X).
- JONES, Dr. LEVI, Green River, N. C.: Mineral. 849 (XVI).
- JORDAN, W. T., Griffin, Ga.: Mineral. 1059 (XVI).
- JOUY, P. L., U. S. National Museum: Supposed aluminum ore from Arizona. 966 (XVII).
- JOYNES, W. N., Wesson, Miss.: Specimen of butterfly. 842 (X).
- KANE, JAMES A., Jensen, Utah: Mineral. 1052 (XVI).
- KAZEE, W. L., Lowmansville, Ky.: Minerals. 980, 988 (XVI).
- KEITH and BLISS, Drs., Bonne Terre, Mo.: Specimen of fossil tooth. 822 (XII).
- KENNEDY, E. B., Amicus, Va.: Specimen of ore from Virginia. 969 (XVII).
- KENNEDY, THOMAS C., Baltimore, Md.: Stone from Baltimore. 1013 (XVII).
- KNIGHT, E. B., Woodford, Ontario, Canada: Insects. 1209 (X).
- KNOTT, W. T., Lebanon, Ky.: Sample of well-drillings. 908 (XIV).
- KNOWLES, F. E., Spencer, Iowa: Specimens of grass and birds' eggs. 901 (v, B; XV).
- KOHN, GUSTAVE, New Orleans, La.: Snakes, 1058, 1183 (VI).
- KOBBE, Maj. W. A., U. S. Army, Artillery School, Fort Monroe, Va.: Fungus. 817 (XV).
- KREISHER, D., Johnson City, Tenn.: Ores from Tennessee. 1012, 1014 (XVII).
- KUENCER, O. F., Kingman, Ariz.: Insects injurious to grapevines; also bulbs or lumps which injure cottonwood trees in Arizona. 900 (X).
- LAMBERT BROTHERS, Kearney, Nebr.: Bird-skin. 1142 (24385) (v, A).
- LAMPIERE, F. W., Chittenango, N. Y.: Samples of well-drillings. 882 (XIV).
- LANE, WILFRED, Wild Rose, Wis.: Crystalline quartz. 1126 (XVII).
- LAWS, FRANKLIN, Windom, N. C.: Minerals. 1229 (XVI).
- LEAVELL, J. M., Culpeper, Va.: Insects. 1043 (X).
- LEDY, J. H., Marion, Pa.: Sample of earth. 876 (XVII).
- LEE, G. S., Lyerly, Ga.: Mineral. 1080 (XVI).
- LEE, Miss JANE E., Richmond, Ala.: Ore. 1010 (XVII).
- LEGGE, J. F., Shepherdstown, W. Va.: Mineral. 1028 (XVI).
- LESTER, Mrs. G. P., Chillicothe, Ill.: Moth. 1187 (X).
- LEWTER, F. A., Orlando, Fla.: Indian bowl. (Returned.) 831 (II, B).
- LIVINGSTON, E., New Orleans, La.: Specimen of *Benacus griseus*. 870 (X).
- LOMBARD, H., Westfield, Mass.: Minerals. 1072 (XVI).
- LOWNDES, C. GAMBLE, Baltimore, Md.: Two specimens of Bob-white (mounted). (Returned.) 965 (v, A).
- LOVE, Dr. T. B., Gunsight, Tex.: Butterfly. 1194 (X).
- LUPTON, JOHN S., Winchester, Va.: Rock, supposed to be "coal-bloom." 797 (XVII).
- LYON, HENRY S., Sollitt, Ill.: Luna-moth. 1152 (X).
- MCCAIGUE, P., Danvers, Mass.: Insect. 1189 (X).
- MCCOMAS, FREDERICK F., Hagerstown, Md. (through Hon. L. E. McComas): Iron ore and a bottle of mineral water. (Water returned.) 887 (XVII).
- MCCOMAS, Hon. L. E. (See under Frederick F. McComas.)
- MCDONNELL, F., Grant, Tex.: Insect. 813 (X).
- MCGALLEARD, W. M., Connelly Springs, N. C.: Mineral. 831 (XVI).
- MCLWRAITH, T., Hamilton, Ontario, Canada.: Eight specimens, representing 6 species, of birds, from the vicinity of Toronto. (Returned.) 890 (v, A).
- MANNING, T. H., Mineral, Idaho.: Insect. 1244 (X).

- MARJENHOFF, JOHANNES, Charleston, S. C. (through Mr. R. L. Garner): Calc tufas from the south of Germany. 1029 (XVII).
- MARSH, JOHN S., Chicago, Ill.: Plants. 1243 (XV).
- MARTIN, D. G., Eagle Rock, Idaho.: Specimen of supposed kaolin. 1133 (24409) (XVII).
- MAV, WILLIAM R., Nephi, Utah.: Mineral. 985 (XVI).
- MAVDWELL, Rev. GEORGE E., Baltimore, Md.: Insects. 977 (X).
- MEDDOCK, FRANK, Maineville, Ohio: Two fossils found in a strata of rock. 1071 (XIII, A).
- MEEKER, Dr. J. W., Nyaack-on-Hudson, N. Y.: Plants. 938, 1159 (XV).
- MELLINGER, I. G., Stephenson, Va.: Minerals. 999, 1018 (XVI).
- MELVILLE, W. P., Orillia, Ontario, Canada: Crystals. 839 (XVI).
- MENZL, A., Steinway, Long Island: Supposed petrified wood. 1140 (XVI).
- MERRILL, GEORGE R., Grand Rapids, Mich.: Collection of Parker's and Weaver's Alchemacs, 1730-1750 inclusive, and an Indian skull. 851 (23582). (I, III).
- METCALFE, CHARLES, Las Cruces, N. Mex.: Sample of kaolin. 1060 (XVII).
- MIARS, FREMONT, Hartmonsville, W. Va.: Mineral. 941 (XVI).
- MILBURN, BERT, Round Hill, Va.: Moth. 1195 (X).
- MILLER, B. F., East Martinsburgh, N. Y.: Moth. 1206 (X).
- MILLER, H. D., Plainville, Conn.: Egg-case of skate or ray. 883 (VII).
- MILLER, G. M., Newport, Ky.: Seed found among Persian locusts. 837 (XV); moth. 1167 (X).
- MILLER, G. S. jr., Cambridge, Mass.: Three specimens of *Thomomys* nov. sp. (Returned.) 1100 (IV); skin and skull of Jumping-mouse. (Returned.) 1115 (IV); specimens of Harvest-mice from Kansas. (Returned.) 1144 (IV).
- MILLER, M. J., Deadwood, S. Dak.: Specimens of fossiliferous slate rock. 1210 (XVI).
- MITCH, JOHN L., Edmond, Okla.: Specimens of grass. 1227 (XV).
- MONTGOMERY MARBLE COMPANY, Blacksburgh, Va. (through W. B. Conway): Specimens of black marble from Virginia. 860 (XVII).
- MOOREHOUSE, JOSEPH, Hibernia, Fla.: Sample of earth. (Returned.) 1083 (VIII).
- MOYERS, MARION, Compensation, Tenn.: Fossils, shells, and ores. 1186 (XIII, A; XVII).
- MUR, JOHN, Brooklyn, N. Y.: Two samples of earth. 953 (XVII).
- MULKEY, J. K., Los Angeles, Cal.: Mineral from California. 983 (XVI).
- MUNGER, C. A., Hannibal, Mo.: Specimen of mineral and a fossil. 949 (XIII, A; XVI).
- MURPHY, THOMAS M., Sanborn, W. Dak.: Ancient silver coin found in an old fort in Ireland. (Returned.) 1037 (I).
- MYER, W. E., Carthage, Tenn.: Jaw-bone of porpoise. (Returned.) 832 (IV).
- MYERS, Dr. R. P., Green Mountain Falls, Colo.: Anatomical specimen. 1163 (IV).
- NARRIN, Mrs. M. L., Goodrich, Mich.: Geological specimens from Hadley Hill. 1157 (XVII).
- NELSON, CHRISTIAN, Virginia City, Mont.: Sample of clay. (Returned.) 1062 (XVII).
- NELSON, WILLIAM, Sally, S. C.: Specimens of supposed marl, limestone, and chalk from Aiken County. 1051 (XVII).
- NEWLON, Dr. W. S., Oswego, Kans.: Specimens of fossil-leaf coral. 1076 (XIII, A).
- NOYES, J. B., Lawrenceburg, Tenn.: Ore. 927 (XVII).
- O'FARRALL, Hon. CHARLES T., Harrisonburg, Va.: Ore. 1101 (XVII).
- OLDHAM, Mrs. NATHAN J., Johnstown, Pa.: Horsefly and electric-light bug. 1153 (X).
- OLIVER, J. F., Steubenville, Ohio: Leaves from maple tree. 920 (XV).
- OSBORNE, E. & SON, Fort Smith, Ark.: Insect from Indian Territory. 1135 (X).
- OSBORN, Prof. H. L., Hamline, Minn.: Shells. (Returned.) 1103 (IX).
- PAGE, J. B., North Fork, Cal.: Herbs. 1181 (XV).
- PALMER, W. L., Crookston, Minn.: Hide of moose. 1122 (24384) (IV).

- PARK, MRS. KATHERINE B., Hampton, Va.: Insect. 1217 (x).
- PARRISH, GEORGE W., Wenatchee, Wash.: Specimens of lime and stone containing crystals. 830 (xvii).
- PATTON, W., Prestonville, N. C.: Stones. 1191 (xvi).
- PETERSON, R., Green Mountain, N. C.: Three minerals. 1026 (xvi).
- PHILLIPS, L. E., Peede's, Tex.: Insect. 1161 (x).
- POOL, CHARLES, Hubbardstown, W. Va.: Two photographs representing the skull of a hog. 996 (iv).
- POTTER, Miss ELLA B., Norwich, Kans.: Moth. 1147 (x).
- PRICE, I. K., Holly Brook, Va. (through D. W. M. Wright): Specimens of rocks. 1017 (xvii).
- PROCK, A. B., Osecola, Mo.: Mineral. 1091 (xvi).
- RANKIN, J. A., Mer Range, La.: Insect from Louisiana. 886 (x).
- RAYBURN, ROBERT, Elkhorn Station, W. Va.: Insect. 1240 (x).
- REICH, M., St. Joseph, Mo.: Insect. 1165 (x).
- REYNOLDS, P. V., Copenhavers Mills, W. Va. (through Hon. G. W. Atkinson): Ore from West Virginia. 1021 (xvi).
- RIBLETT, F., Rahway, J.: Worm. 858 (x).
- RICHY, C. R., Abbeville, S. C. (through M. F. Game): Sample of earth. 1079 (xvii).
- RICHTER, Rev. EDWARD F., Cairo, Ga.: Scales of Gar. 857 (vii); minerals. 1109 (xvi).
- RISING, H. A., San Bernardino, Cal.: Specimen of ground gypsum. 820 (xvii).
- ROACH, Mrs. A. D., Louisville, Ky.: Moth. 1246 (x).
- ROANOKE STOCK EXCHANGE, Roanoke, Va. (through R. L. Garner): Specimens of granite and mineral. 888 (xvi, xvii).
- ROARK, J. M., Charlotte, N. C.: Worm. 856 (x).
- ROBBINS, S. G., Siverly, Pa.: Insect. 1200 (x).
- ROBERTS, S. P., Big Pine, Cal.: Samples of clay. 1112, 1158 (xvi, xvii).
- ROBINSON, JAMES H., Lewiston, Idaho: Specimens of magnesia stone. 1170 (24126) (xvii).
- ROBINSON, JOHN M., Bozeman, Mont.: Specimens of mineral. 982, 1090 (xvi).
- ROESSLER, A. R., San Antonio, Tex.: Sample of mineral water. 829 (xvi).
- ROGAN, CHARLES L., Kenton, Ohio: Sample of a substance from a well. 1223 (xv).
- ROGAN, JAMES W., Amis, Tenn.: Two specimens of fossils. 936 (xiii, a). Mineral from Tennessee. 1069 (xvii). Specimen of stone such as was formerly used for millstones. 1094 (xvii).
- ROLFE, HATTIE M., Sherman, S. Dak.: Specimen of insect. 1235 (x).
- ROMER, J. L., Anacortes, Wash.: Floss of "fire-wood." 897 (xv).
- ROSE, OVEREND G., Lakeport, Cal.: Specimen of Woodpecker. 1032 (v, a).
- ROSEDAIL, N., Whiting, Kans.: Mineral. 1102 (xvi).
- ROSENTHAL, JOSEPH, New York city, N. Y.: Three specimens of birds. (Returned.) 1230 (v, a).
- ROUSE, THOMAS, JR., Leota, Pa.: Insects. 1143 (x).
- SACHLAND, NATHAN, Waxahachie, Tex.: Moth. 1151 (x).
- SAMPSON, GEORGE T., Boston, Mass.: Insect from Rhode Island. 1237 (x).
- SCHAAF, PHILIP, Tucson, Ariz.: Ore. 1033 (xvii).
- SCHREIBER, J. D., Allentown, Pa.: Ores. 1180 (24125) (xvii).
- SCOTT, Dr. A. J., Nahma, Mich.: Plant. 826 (xiv).
- SCREVEN, E. W., Columbia, S. C.: Plants and insects. 1193 (x, xv).
- SECRET, T. D., Okolona, Ark.: Fossil bones of mammals. 972 (24275) (xii).
- SHEARER, R. A., Elko, Nev.: Moth. 898 (x).
- SHERIDAN, EDMUND J., Cleveland, Ohio: Shells from Florida. 1212 (ix).
- SHIPLEY, E. A., Jonesboro, Tenn.: Mineral. 1055 (xvi).
- SIMPSON, A. M., Straubville, N. Dak.: Mineral. 1213 (24486) (xvi).

- SLAYTON, C. M., Grattan, Mich.: Two small clay tablets, taken from mounds in Montcalm County. (Returned.) 1162 (III).
- SMEDLEY, S. H., Sanger Junction, Cal.: Specimen of ore (?). 979 (24313) (XVI).
- SMITH, EDWARD, Port Hope, Ontario, Canada: Insect. 1169 (X).
- SMITH, G. T., Middlesboro, Ky. Mineral. 1110 (XVI).
- SNYDER, JACOB, Two Taverns, Pa.: Specimen of stone from Adams County. 1136 (XVI). Specimen, of meteoric iron. 1196 (XVI).
- SPANG, NORMAN, Etna, Pa.: Stone hatchet from North Carolina. 1138 (III).
- SPENCER, Miss FLORENCE I., Oak Lawn, Fla.: Snake. 853 (23179) (VI).
- SPINDLE, H. H., Warrenton, Va.: Minerals. 823, 827 (XVI).
- SPRAY, S. J., Salida, Colo.: Bird. 880 (23528) (V. A.). Skin of mammal. 952 (IV).
- STATE, DEPARTMENT OF. (See under Alexander Bishop.)
- STEDMAN, A. B., Minnesota Lake, Minn.: Insect. 1215 (X).
- STEELE, JOHN G., Rock Hill, S. C.: Mineral. 942 (XVI).
- STEINBAUER, E. F., Vandalia, Ill.: Bird. (Returned.) 1156 (V, A).
- STEINER, R., Waynesboro, Ga.: Collection of stone implements from mounds and village sites in the vicinity of Waynesboro. (Returned.) 1081 (III).
- STEVENSON, E., Granite Cañon, Wyo.: Plants. 1127, 1199 (XV).
- STOCKBRIDGE, Hon. F. B., United States Senate: Stone. 810 (XVII).
- STOKES, W. R., Wallace, Idaho: Insects. 1208 (X).
- STONE, WITMER, Academy of Natural Sciences, Philadelphia, Pa.: Bird. (Returned.) 971 (V, A).
- STONER, D. U., Mount Joy, Pa.: Piece of ash wood with profile of a human face. (Returned.) 995 (I).
- STRUNK, D., Maukato, Minn.: Insects. 799 (X).
- STUART, R. C., Brunswick, Ga.: Insects. 869 (X).
- SWINGLE, O. H., Dudleyville, Ariz.: Ore. 1130 (XVII).
- SYBERT, O. P., Ravenswood, W. Va.: Specimens of ore. 1225 (XVII).
- TAYLOR, DOUGLAS, Columbus, Ohio: Specimen of diatomaceous earth. 1064 (XIV).
- TAYLOR, J. C., Springer, N. Mex.: Sample of a deposit found about six miles from Springer. 1095 (XVII).
- TEGARDEN, W. S., Fort Scott, Kans.: Minerals. 821, 1088 (XVI).
- THE D. H. RANCK PUBLISHING COMPANY, Indianapolis, Ind.: Specimen of stone. 811 (XVII).
- THEODORIDI, N. A., Constantinople, Turkey (through Mr. Edward A. Cary): Nine Babylonian seal cylinders or cuneiform tablets. (Returned.) 1053 (I).
- THORPE, Dr. H. H., Liberty Hill, Tex.: Mineral. 1061 (XVI).
- THELKELD, E. R., Los Angeles, Cal.: Specimen of supposed graphite. 1007 (XVII).
- TICKNOR, F. A., Rockford, Ill.: Skull supposed to have been taken from a mound near Rockford, and a copper spear-head from the same locality. 1073 (24273) (III).
- TILTON, W. L. R., Prairie Depot, Ohio: Insect. 1205 (X).
- TOUZALEN, C. V., Bristol, Tenn.: Insect. 1148 (X).
- TREAT, R. G., Cleveland, Ohio: Three pipes and an ornamented stone object. 959 (III).
- TRESCOTT, Judge WILLIAM H., Washington, D. C.: Specimens of marble. 954 (XVII).
- TREWEEK, JOHN, Salt Lake City, Utah: Ore from Idaho. (Returned.) 986 (XVII).
- TRUSSELL, J. N., Shepherdstown, W. Va.: Ores. (Returned.) 1070 (XVII).
- TULLORT, Miss FLORENCE E., Newark, Ohio: Insects. 1228 (X).
- TUTTLE, Mrs. MARY E., Sabetha, Kans.: Butterfly. 1164 (X).
- TYSON, M., Hope, Ark.: Bone of a mammal. 925 (XI).
- VAN ALLEN, GEORGE C., Mount Pleasant, Iowa: Specimens found deposited on grass. 1234 (X).
- VAN DEURSEN, GEORGE L., Vernon, Tex.: Insect. 1197 (X).
- VAN VLIET, F. C., Shrewsbury, N. J.: Specimen of growth found on a young red cedar tree. 1117 (XV).

- VANNAY, E., Goshen, Ark.: Chert with iron pyrites. 1106 (XVII).
- VARNER, Miss RILE, Berwick, Pa.: Quartz. 1204 (XVI).
- RINGHARZ, THEO. VON, Middletown, Va.: Small tube cemented together with small gravel found in a spring near the North Carolina line, in Tennessee. 932 (X).
- WAGNER, W. H., Cleveland, Ohio: Two Indian stone axes. 962 (III).
- WALKER, E. A., Moulton, Iowa: Piece of a meteorite. (Returned.) 1025 (XVI).
- WALKER, JOHN, Muldon, Miss.: Insect. 878 (X).
- WARD, ELBORN T., Trinidad, Colo.: An iron hanging-lamp, probably of French or Spanish make, found in an old adobe building. 904 (23657) (II A).
- WARREN, HENRY, & Co., Oregon, Tenn.: Ore. 1035 (XVII).
- WATKINS, GEORGE F., Moriah, N. Y.: Rock. 812 (XVII).
- WATKINS, GEORGE W., Moriah, N. Y.: Ores. 916, 964 (XVII). Specimen of mineral. 1047 (XVI).
- WATROUS, E., Weiser, Idaho: Specimen of supposed kaolin. 1173 (XVII).
- WATTS, W. C., Smithland, Ky.: Piece of supposed petrified pork. 950 (XIII, B).
- WEBB, J. S., Elkhorn, W. Va.: Insect. 1219 (X).
- WEBB, W. L., Asbury Park, N. J.: Cocoon of insect. 863 (X).
- WEIGLE, J. A., Washington, D. C.: Chipped flint leaf-shaped implement from St. Lawrence County, N. Y. (Returned.) 1078 (III).
- WELCH, I. E., Alpine, Ala.: Iron ore. 928 (XVII).
- WENNER, Samuel, Drifton, Pa.: Butterfly. 1120 (X).
- WERTH, J. M., Stockton, Va.: Ores. 855 (XVII).
- WEST, C. S., Sumter, S. C.: Leaf and seeds of fern (?) 1141 (XV).
- WESTERVELT, Mrs. F. M., Rural, Fla.: Rock. 1201 (XVII).
- WETHERBY, M. K., Trenton, N. J.: Moth and cocoon. 1176 (X).
- WHITE, Stewart E., Grand Rapids, Mich.: Three birds' skins. (Returned.) 867 (V, A).
- WHITEORN, Worth, Saratoga, Nebr.: Moth. 1241 (X).
- WICKER and ROCKETT, Red Oak, Tex. Insect. 1184 (X).
- WIGERSMA, P., Sioux City, Iowa. European butterflies. 1113 (X).
- WIGHT and HENNE, Salina, Kans. Clay. (Returned.) 948 (XVII).
- WILEMAN, E. D., Massillon, Ohio. Worm. 1039 (X).
- WILLARD, CHARLES D., Cottonwood, Ariz. Mineral. 881 (XVI).
- WILMOTH, H. C., Washington, D. C. (through Hon. William L. Wilson). Ores. 1057 (XVI).
- WINCH BROTHERS, Boston, Mass. Insect, and a pair of shoes showing injury done by the insect. 1138 (X).
- WILSON, Hon. J. H., House of Representatives. Six specimens of minerals. 807 (XVI).
- WILSON, J. S., Stillman, Va. Mineral (through Hon. G. W. Atkinson). 1003 (XVI).
- WILSON, WILLIAM, Welch, Va. Mineral. 818 (XVI).
- WILSON, Hon. WILLIAM L. (See under H. C. Wilmoth.)
- WILVERT, E., Sunbury, Pa. Ores and a mineral. 835, 846, 848, 930, 956, and 1236 (XVI, XVII).
- WITTKUGEL, ERICH, San Pedro Sula, Honduras. Birds' skins and mammal skins. 1085, 24394 (IV, V, A).
- WILLIAMS, A. J. Specimen of fungus from Florida. 803 (XV).
- WITHROW, Dr. J. M., La Luz, N. Mex. Rock. 978 (XVII).
- WOOD, Albert, North Bristol, Ohio. Stone. 924 (XVII).
- WORRALL, WILLIAM, St. Louis, Mo. Fish. (Returned.) 1174 (VII).
- WORTHEN, C. K., Warsaw, Ill. Thirty-three skins and skulls of mammals. (Purchased.) 862 (24069) (IV). Two skins of raccoon. (Purchased.) 926 (24068) (IV). Thirty-three specimens representing 27 species of birds' skins from various localities. (Returned.) 975 (V, A). Specimens of reptiles from Texas, 1077 (24410) (VI). Mammal skins. 1099 (24265) (IV).
- WRIGHT, D. W. M. (See under L. R. Price.)

- WRIGHT, SAMUEL H., Longview, Tex. Specimen of mineral ore. 805 (XVII).
 WRIGHT, S. P., Elkader, Kans. Three specimens of rocks. 804 (XVII).
 YEATTS, L. K., Ella, Va. Ores. (One sample returned.) 1004 (XVII). Minerals,
 1019 (XVI). Ores, 1048, 1097 (XVII).
 YOUNG, J. R., Windom, N. C. Minerals, 808, 833, 1027, 1238 (XVI).
 ZEIGLER, F. A., Boyd's Station, Md. Ores, 838 (XVII).
 ZIPP, E. H., Capon Bridge, W. Va. Specimen of supposed kaolin. 893 (XVII).
 ZUBERBIER, A. W., Logan, Minn. Specimen of petrified nut. (Returned.) 1111
 (XIV).

Index to list of specimens sent for examination and report, arranged geographically.

Source.	Number of lot.	Total.
North America:		
British America	839, 890, 895, 1169, 1209.....	5
Central America	1085.....	1
Mexico	861, 1226.....	2
United States:		
Alabama.....	928, 1010, 1139.....	3
Arizona.....	800, 852, 881, 900, 966, 1033, 1046, 1130, 1149, 1247.....	10
Arkansas.....	809, 817, 925, 972, 1065, 1106.....	6
California.....	820, 861, 912, 921, 945, 946, 947, 961, 979, 983, 997, 1007, 1032, 1108, 1112, 1158, 1191, 1214.....	18
Colorado.....	880, 904, 918, 952, 1023, 1168, 1220.....	7
Connecticut.....	883, 1220.....	2
District of Columbia.....	807, 810, 824, 903, 954, 1057.....	6
Florida.....	798, 803, 831, 853, 873, 874, 892, 955, 1083, 1201, 1211.....	11
Georgia.....	857, 869, 922, 943, 1059, 1080, 1081, 1104, 1109.....	10
Idaho.....	1133, 1160, 1170, 1173, 1208, 1244.....	6
Illinois.....	801, 819, 843, 862, 864, 885, 891, 909, 926, 968, 975, 994, 1066, 1073, 1077, 1099, 1152, 1156, 1185, 1187, 1243.....	21
Indiana.....	811, 1096, 1178.....	3
Indian Territory.....	1135, 1171.....	2
Iowa.....	901, 918, 1001, 1025, 1063, 1086, 1113, 1119, 1224, 1232, 1234.....	11
Kansas.....	804, 948, 1016, 1076, 1088, 1102, 1105, 1144, 1147, 1154, 1164, 1177, 1188.....	13
Kentucky.....	837, 872, 889, 908, 950, 973, 980, 988, 1011, 1041, 1110, 1167, 1246.....	13
Louisiana.....	870, 886, 1058, 1183, 1231.....	5
Maine.....	987.....	1
Maryland.....	828, 887, 933, 960, 965, 977, 1013, 1087.....	8
Massachusetts.....	815, 836, 859, 1072, 1100, 1115, 1138, 1189, 1237.....	9
Michigan.....	826, 851, 867, 1005, 1056, 1157, 1162, 1192.....	8
Minnesota.....	799, 866, 1103, 1111, 1122, 1215.....	6
Mississippi.....	841, 842, 878, 1128, 1131.....	5
Missouri.....	822, 896, 923, 949, 1091, 1121, 1165, 1174, 1245.....	9
Montana.....	929, 982, 1062, 1891, 1125.....	5
Nebraska.....	1142, 1233, 1241.....	3
Nevada.....	898.....	1
New Jersey.....	802, 858, 863, 990, 1008, 1020, 1022, 1068, 1117, 1175, 1176.....	11
New Mexico.....	978, 981, 1050, 1051, 1060, 1095, 1178.....	7
New York.....	812, 838, 868, 882, 916, 938, 944, 953, 957, 964, 993, 1002, 1006, 1047, 1074, 1078, 1118, 1137, 1140, 1146, 1155, 1159, 1190, 1206, 1230, 1239.....	26
North Carolina.....	808, 833, 834, 849, 856, 919, 1026, 1027, 1191, 1198, 1229, 1238.....	12
North Dakota.....	1213.....	1
Ohio.....	872, 879, 884, 920, 924, 951, 959, 962, 1036, 1039, 1040, 1064, 1071, 1075, 1082, 1134, 1205, 1212, 1216, 1222, 1223, 1228.....	22
Oklahoma Territory.....	1227.....	1
Oregon.....	861, 913.....	2

Index to list of specimens sent for examination and report, etc.—Continued.

Source.	Number of lot.	Total.
United States—Continued.		
Pennsylvania.....	835, 846, 848, 873, 876, 894, 910, 911, 917, 930, 956, 995, 971, 1009, 1015, 1038, 1067, 1089, 1120, 1136, 1143, 1153, 1180, 1196, 1200, 1204, 1207, 1236, 1242	29
South Carolina.....	854, 915, 942, 1029, 1054, 1079, 1098, 1141, 1193	9
South Dakota.....	899, 1037, 1114, 1123, 1210, 1235	6
Tennessee.....	832, 840, 845, 875, 905, 906, 927, 936, 937, 1012, 1014, 1030, 1035, 1055, 1069, 1092, 1093, 1094, 1129, 1148, 1159, 1166, 1172, 1179, 1186, 1203	26
Texas.....	805, 813, 816, 829, 844, 907, 934, 935, 967, 1061, 1132, 1151, 1161, 1182, 1184, 1194, 1197, 1202, 1218	19
Utah.....	877, 931, 958, 970, 985, 986, 991, 1024, 1042, 1049, 1052, 1084, 1145, 1168	14
Virginia.....	797, 806, 818, 823, 825, 827, 847, 855, 860, 888, 902, 932, 969, 984, 989, 992, 999, 1004, 1017, 1018, 1019, 1043, 1044, 1048, 1097, 1101, 1124, 1195, 1217	29
Washington.....	814, 830, 871, 897, 939, 974, 976, 1031, 1034	9
West Virginia.....	850, 865, 893, 941, 963, 996, 1003, 1021, 1028, 1070, 1107, 1219, 1221, 1225, 1240	15
Wisconsin.....	1126	1
Wyoming.....	821, 1045, 1127, 1199	4
Europe:		
Turkey.....	1053	1
Africa:		
Egypt.....	1000	1
Asia.....	998	1
Asia Minor.....	1116	1

FOREIGN EXCHANGES.

Exchanges of duplicate specimens with foreign museums have been continued in accordance with the custom which has prevailed in past years. The record of domestic exchanges is shown in the accession list (Section V), and the exchanges made with persons and scientific institutions abroad are referred to in the following statement.

ARTS AND INDUSTRIES.

Mr. Charles Gindriez, director of the museum at Chalou sur Saône, France, transmitted an impression from a heliograph "Portrait of Cardinal Amboise" prepared from an engraving by Briot, made by Joseph Nicéphore Niepce in 1824, for which a collection of archaeological objects was sent in exchange.

From the Royal Botanical Gardens, Kew, England (through Dr. W. T. Thiselton-Dyer, director), was received a collection of Indian and textile fabrics, samples of miscellaneous drugs, and a collection of seeds. Ethnological objects and bogus coffee beans were sent in exchange.

ETHNOLOGY.

From the British Museum, London, England, were received twenty-five ethnological objects from Kaffirland, South Africa, in exchange for specimens of the same character.

Mr. Henry Balfour, of the Museum, Oxford, England, transmitted models of a shell lamp from the southwest coast of Brittany, and from the Orkney and Shelter islands; also a French crusie of brass from Normandy; two iron lamps used by bakers for lighting ovens, and a spoon made from a pecten shell. In exchange a blowgun of cane from the Chetimacha Indians, Louisiana, model of fire-drill from the Eskimos of Anderson River, Canada, and a pottery lamp from Morgantown, W. Va., were transmitted.

Several small exchanges of ethnological objects have been made with Mr. Edward Lovett, of Croydon, England.

From the Royal Botanical Gardens, Kew, England (through Dr. W. T. Thiselton-Dyer, director), was received a mat from New Guinea, for which an equivalent has been transmitted.

The Museum, Oxford, England, through Mr. Henry Balfour, transmitted a bamboo blow-pipe from Burmah, for which an equivalent will soon be sent.

PREHISTORIC ANTHROPOLOGY.

From the University of New Brunswick, Fredericton, New Brunswick, through Mr. L. W. Bailey, were received three stone implements and other specimens, for which twenty-six stone implements and six fragments of pottery were sent in exchange.

Exchanges of archaeological material have been made with Mr. Edward Lovett, of Croydon, England.

A collection of archaeological objects was transmitted to the Museo Nazionale d'Anthropologia, Florence, Italy, for which an equivalent will doubtless be received before long.

MAMMALS.

Dr. R. Collett, director of the Zoölogical Museum, Christiania, Norway, transmitted a skeleton of a porpoise (*Lagenorhynchus albirostris*), for which the skin and model of skull of a California sea-lion will be sent in exchange.

Seventy-one specimens of mammals were sent to the Auckland Museum, Auckland, New Zealand, for which an equivalent has been promised.

A skin and skull of *Antilocapra americana*, and skull of *Bison americanus*, has been transmitted to the Australian Museum, Sydney, New South-Wales, for which material has been promised in exchange.

To Dr. George Pouchet, Musée d'Histoire Naturelle, Paris, France, was sent a skeleton of *Bison americanus*, in exchange for objects already received.

BIRDS.

Mr. W. Eagle Clarke, Edinburgh Museum of Science and Art, Edinburgh, Scotland, sent eleven specimens, representing nine species, of birds' skins from England, Azores Islands, Siberia, and Japan, for which an exchange will be sent.

From the National Museum of Costa Rica, San José, Costa Rica, through Mr. George K. Cherrie, were received sixty-five birds' skins, representing thirty-five species from Costa Rica, including types of two new species and one new genus, two species new to the collection, and plumages previously unrepresented, for which a collection of birds' skins was transmitted in exchange.

Ten specimens of birds' skins have been transmitted, in exchange, to the Auckland Museum, Auckland, New Zealand.

To Dr. George Pouchet, Musée d'Histoire Naturelle, Paris, France, have been sent four skeletons of birds, in return for material received.

REPTILES AND BATRACHIANS.

A collection of reptiles and batrachians was sent to the Auckland Museum, Auckland, New Zealand, for which specimens have been promised in return.

FISHES.

From the Royal Zoölogical Museum, Copenhagen, Denmark (through Prof. Dr. Chr. Lütken, president), were received four species of fishes, including *Liparis fabricii*, *Lycoden lütkeni*, *Icelus hamatus*, and *Aspidophoroides olrikii*, for which an exchange of deep-sea forms will be prepared for transmission.

The skin of a specimen of *Lepidosteus osseus* has been transmitted to the Australian Museum, Sydney, New South Wales, for which an equivalent has been promised.

MOLLUSKS.

To Dr. Hugh Fulton, South Kensington, England, were sent four specimens of *Voluta stearnsii*, in exchange for exotic shells previously received.

From the Royal Zoölogical Museum, Copenhagen, Denmark (through Prof. Dr. Chr. Lütken, president), were received twenty-seven specimens of marine shells, representing eleven species, for which an exchange will be sent.

A collection of North American Unionidæ has been sent to Dr. H. Von Ihering, Grande do Sul, Brazil, in exchange for a collection of South American shells already received.

INSECTS.

From Mr. J. H. Brady, Cape Town, South Africa, were received one hundred and sixty-seven species of South African insects, for which thirty-three species of coleoptera and other insects were sent in exchange.

Alcoholic specimens of Myriapods were sent to Mr. O. F. Cook, Orillia, Ontario, Canada, in exchange for specimens which have been promised.

Mr. Paul Noël, of Rouen, France, transmitted fourteen species of European *Caribidæ*, for which an exchange will be sent.

MARINE INVERTEBRATES.

From the Royal Museum of Natural History, Berlin, Germany, (through Dr. Karl Möbius, director) was received a collection of echinoderms from Europe, South America, Asia, and the East Indies, for which one hundred and fifty specimens of echinoderms, representing forty-two species, were sent in exchange.

From the Royal Zoölogical Museum, Copenhagen, Denmark (through Prof. Dr. Chr. Lütken), was received a collection of marine invertebrates, for which a collection will be prepared in exchange.

Dr. Charles F. Newcombe, secretary of the Natural History Society of British Columbia, Victoria, transmitted a small collection of dried crustaceans from British Columbia, and an alcoholic specimen of *Aebia pugettensis* with Lepton attached, for which an exchange will be sent.

Prof. George S. Brady, Mowbray Villa, Sunderland, England, has been sent specimens of echinoderms and corals, for which an equivalent has been promised.

INVERTEBRATE FOSSILS (PALEOZOIC.)

From the Geological Survey of Sweden, Stockholm, Sweden, were received fifty-one specimens of Cambrian fossils in exchange for specimens already sent.

From the University of New Brunswick, Fredericton, New Brunswick (through Mr. L. W. Bailey), were received ten specimens of Canadian fossils, for which an equivalent has been transmitted.

FOSSIL PLANTS.

From the University of New Brunswick, Fredericton, New Brunswick (through Mr. L. W. Bailey), were received fossil plants, for which specimens were sent in exchange.

Twenty-two specimens of fossil plants have been sent to Mr. Isaac Earushaw, Oldham, England, in exchange for plants already received.

BOTANY.

From the Royal Botanic Garden, Calcutta, India (through Dr. G. King, superintendent), were received specimens of dried plants from India, for which an exchange will be sent.

Dr. I. Hagen; Trondjhem, Norway, transmitted specimens of Norwegian mosses, for which an exchange will be prepared.

Prof. A. G. Nathorst, of the Royal Academy of Science, Stockholm, Sweden, sent a collection of Arctic mosses in exchange for one hundred specimens of dried ferns from the United States and Costa Rica, previously sent.

Prof. T. M. Fries, Upsala, Sweden, was sent eight hundred species of dried plants from the United States, for which an equivalent will be received.

MINERALS.

From the University of New Brunswick, Fredericton, New Brunswick (through Mr. L. W. Bailey), were received specimens of minerals, in exchange for material sent.

Mr. H. J. Johnston-Lavis, of Naples, Italy, transmitted eleven specimens of minerals, for which an exchange of eighteen specimens of miscellaneous minerals was sent.

From the Royal Saxon Mining Academy, Freiberg, Saxony, were received fifty-five specimens of minerals, for which a collection, consisting of forty-four specimens of miscellaneous minerals, was sent in exchange.

GEOLOGY.

From the University of New Brunswick, Fredericton, New Brunswick (through Mr. L. W. Bailey), were received specimens of geological material, for which an exchange has been sent.

Sixteen specimens of minerals have been sent to the Auckland Museum, Auckland, New Zealand, as an exchange for material which has been promised.

Mr. H. J. Johnston-Lavis, of Naples, Italy, sent a small series of eruptive rocks from Mount Vesuvius, for which specimens of rocks were sent in exchange.

From Mr. B. Sturtz, of Bonn, Prussia, were received fifty-five specimens of rocks from European sources, for which ninety-three specimens of rocks were sent in exchange. Mr. Sturtz also sent specimens of ores, for which an exchange will be prepared and forwarded.

Four specimens of rocks were sent, in exchange, to Prof. P. Groth, Munich, Bavaria, for which an equivalent has been promised.

PUBLICATIONS.

In the report of the National Museum for 1889 the subject of the publications of the National Museum is treated at some length. It is therefore not considered necessary to review *in extenso* this branch of the work in this report.

It is proper to remark that the work of issuing the publications of the Museum is now being more punctually performed than heretofore. The report for 1889 has been published, and the report for 1890 has been in type for several months. Volume XIII of Proceedings of the National Museum (for 1890) is in type, and all the papers of volume XIV (for 1891) have been issued separately and distributed, although the volume in bound form has not yet appeared.

In the case of the "Bulletin," No. 38 has been published during the last fiscal year, and some of the parts of Bulletin 39 are now being distributed. Before long Bulletins 40, 41, and 42 will be published.

During the last session of Congress an appropriation of \$15,000 was made for printing the report and other publications of the Museum,

being an increase of \$5,000 over the preceding year. This will render possible a somewhat wider distribution of the "Proceedings" and "Bulletin," though the increased number of copies is still far from sufficient to meet all legitimate demands.

REPORTS OF THE NATIONAL MUSEUM.

The Museum report for 1888 was issued during the current year, and those for 1889 and 1890 are now in type. The delay in issuing the last two reports has been occasioned by the overcrowded condition of the Government Printing Office and the increased amount of engraving needed for these reports. The report for 1888 contains xxii + 876 pages. The following special papers, based upon collections in the Museum, are published in this report:

1. The Coast Indians of Southern Alaska and Northern British Columbia. By Lieut. Albert P. Niblack, U. S. Navy.
2. A catalogue of the Hippiusley collection of Chinese Porcelains, with a sketch of the history of the ceramic art in China. By Alfred E. Hippiusley (of the Imperial Chinese customs service).
3. The expedition to Funk Island, with observations upon the history and anatomy of the Great Auk. By Frederic A. Lucas.
4. Fire-making Apparatus in the U. S. National Museum. By Walter Hough.
5. The collection of Korean mortuary pottery in the U. S. National Museum. By Pierre Louis Jouy.
6. A study of prehistoric anthropology. By Thomas Wilson.
7. Ancient Indian matting, from Petit Anse Island, Louisiana. By Thomas Wilson.
8. Results of an inquiry as to the existence of man in North America during the paleolithic period of the stone age. By Thomas Wilson.

PROCEEDINGS OF THE U. S. NATIONAL MUSEUM.

The papers published in the "Proceedings" consist chiefly of technical descriptions of specimens, prepared by the curators of the National Museum or by other investigators, founded upon the collections in the National Museum. Vol. XII of the "Proceedings" was issued in November, 1890, although a few unbound copies were printed before the end of the previous fiscal year. It contains 686 pages (23 plates, 19 text figures) and embraces 32 papers by 26 authors, 10 of whom are connected with the National Museum. A list of the papers is given on pp. 54-56 of the last report. The papers relate to the following subjects:

Subject.	No. of papers.	Subject.	No. of papers.
Archaeology	2	Mammals	1
Birds	6	Marine invertebrates	1
Fishes	5	Mollusks	1
Fossil invertebrates	2	Osteology	1
Fossil plants	1	Recent plants	1
Geology	1	Reptiles	3
Insects	7		

Vol. XIII of the "Proceedings" was put in type during the fiscal year, but was not issued until after June 30. It includes 52 papers, comprising separates 790 to 841. The titles of the separate papers, with the names of the authors, are here given:

- No. 790. Description of a new species of land shell from Cuba—*Vertigo Cubana*. By William H. Dall. Pp. 1-2.
- No. 791. Description of a new species of fish from Tippecanoe River, Indiana. By David Starr Jordan and Barton Warren Evermann. Pp. 3, 4.
- No. 792. Remarks on some fossil remains considered as peculiar kinds of marine plants. By Leo Lesquereux. Pp. 5-12.
- No. 793. On certain Mesozoic fossils from the islands of St. Paul and St. Peter, in the Straits of Magellan. By Charles A. White. Pp. 13, 14.
- No. 794. Notes on the leaves of *Liriodendron*. By Theodore Holm. Pp. 15-35.
- No. 795. New fishes collected off the coast of Alaska and the adjacent regions southward. By Tarleton H. Bean. Pp. 37-45.
- No. 796. Preliminary report on the fishes collected by the steamer *Albatross* on the Pacific coast of North America during the year 1889, with description of twelve new genera and ninety-two new species. By Charles H. Gilbert. Pp. 49-126.
- No. 797. Further notes on the genus *Xiphocolaptes* of Lesson. By Robert Ridgway. Pp. 17, 48.
- No. 798. Catalogue of skeletons of birds collected at the Abrolhos Islands, Brazil, the Straits of Magellan, and the Galapagos Islands, in 1887-'88. By Frederic A. Lucas. Pp. 127-130.
- No. 799. Birds from the coasts of Western North America and adjacent islands, collected in 1888-'89, with descriptions of new species. By Charles H. Townsend. Pp. 131-142.
- No. 800. Reptiles from Clarion and Socorro islands and the Gulf of California, with description of a new species. By Charles H. Townsend. Pp. 143, 144.
- No. 801. Plants collected in 1889 at Socorro and Clarion islands, Pacific Ocean. By Dr. George Vasey and J. N. Rose. Pp. 145-149.
- No. 802. On a new genus and species of Colubrine snake from North America. By Leonhard Stejneger. Pp. 151-155.
- No. 803. The osteological characteristics of the family Auguillidae. By Theodore Gill. Pp. 157-160.
- No. 804. The osteological characteristics of the family Synphobranchidae. By Theodore Gill. Pp. 161-164.
- No. 805. The osteological characteristics of the family Muracidae. By Theodore Gill. Pp. 165-170.
- No. 806. On the disappearance of the Dick Cissel (*Spiza Americana*) from the District of Columbia. By Hugh M. Smith. Pp. 171, 172.
- No. 807. Description of a new species of bat, *Atalapha semota*. By Harrison Allen. Pp. 173-175.
- No. 808. On the snakes of the genus *Charina*. By Leonhard Stejneger. Pp. 177-182.
- No. 809. On the North American lizards of the genus *Barissia* of Gray. By Leonhard Stejneger. Pp. 183-185.
- No. 810. A collection of stone implements from the District of Columbia. By S. V. Prudden. Pp. 187-194.
- No. 811. Notes on the occurrence of a young crab-eater (*Elacate Canada*) from the Lower Hudson Valley, New York. By Dr. A. K. Fisher. Pp. 195, 196.
- No. 812. Observations on the life history of the Bottlenose Porpoise. By Frederick W. True. Pp. 197-203.

- No. 813. Description of new West American land, fresh water, and marine shells, with notes and comments. By Robert E. C. Stearns. Pp. 205-225.
- No. 814. Description of two new species of mammals from Mount Kilima-Njaro, East Africa. By Frederick W. True. Pp. 227-229.
- No. 815. Osteological characteristics of the family Muraenesocidae. By Theodore Gill. Pp. 231-234.
- No. 816. On the family Ranicipitidae. By Theodore Gill. Pp. 235-238.
- No. 817. The osteological characteristics of the family *Simenuchelyidae*. By Theodore Gill. Pp. 239-242.
- No. 818. The characteristics of the Daelylopteroidae. By Theodore Gill. Pp. 243-248.
- No. 819. Notes on the birds observed during the cruise of the U. S. Fish Commission schooner *Grampus*, in the summer of 1887. By William Palmer. Pp. 249-265.
- No. 820. Description of new forms of Upper Cambrian fossils. By Charles D. Walcott. Pp. 266-279.
- No. 821. Notes on Triassic plants from New Mexico. By W. M. Fontaine and F. H. Knowlton. Pp. 281-285.
- No. 822. Notes on fishes of the genera *Agosia*, *Algansea*, and *Zophendum*. By David Starr Jordan. Pp. 287, 288.
- No. 823. Description of a new species of *Etheostoma* (*E. micropterus*) from Chihuahua, Mexico. By Charles H. Gilbert. Pp. 289, 290.
- No. 824. Description of a new species of bat of the genus *Carollia*, and remarks on *Carollia brevicauda*. By Harrison Allen. Pp. 291-298.
- No. 825. Osteological characteristics of the family Amphipnoideae. By Theodore Gill. Pp. 299-302.
- No. 826. Description of a new species of mouse, *Phenacomys longicaudus*, from Oregon. By Frederick W. True. Pp. 303, 304.
- No. 827. Notes on the habits of the moose in the far north of British America in 1865. By J. G. Lockhart. Pp. 305-308.
- No. 828. Observations on the Farallon Rail. By Robert Ridgway. Pp. 309-311.
- No. 829. List of fishes obtained in the harbor of Bahia, Brazil, and in adjacent waters. By David Starr Jordan. Pp. 313-336.
- No. 830. Notes on the osteology of the *Paridae*, *Sitta*, and *Chamaea*. By Frederic A. Lucas. Pp. 337-345.
- No. 831. Notes on the *Aspredinidae*. By Theodore Gill. Pp. 347-352.
- No. 832. Note on the genus *Felichthys* of Swainson. By Theodore Gill. Pp. 353, 354.
- No. 833. The characteristics of the family of *Scatophagoid* fishes. By Theodore Gill. Pp. 355-360.
- No. 834. On the relations of *Cylopteroidea*. By Theodore Gill. Pp. 361-376.
- No. 835. The osteological characteristics of the family *Hemitripterae*. By Theodore Gill. Pp. 377-380.
- No. 836. Playing cards from Japan. By Mrs. J. King Van Rensselaer. Pp. 381, 382.
- No. 837. Notes on North American *Myriapoda* of the family *Geophilidae*, with descriptions of three genera. By O. F. Cook and G. N. Collins. Pp. 383-396.
- No. 838. Contributions toward a monograph of the *Noctuide* of temperate North America. Revision of *Homohadena*, Grote. By John B. Smith. Pp. 397-405.
- No. 839. Contributions toward a monograph of the *Noctuide* of temperate North America. Revision of the species of *Hadena* referable to *Xylophasia* and *Luperina*. By John B. Smith. Pp. 407-447.
- No. 840. A supplementary list of fishes collected at the Galapagos Islands and Panama, with description of one new genus and three new species. By Charles H. Gilbert. Pp. 449-455.
- No. 841. The Birds of Manitoba. By Ernest E. Thompson. Pp. 457-643.

These papers may be classified under the following subjects:

Subject.	No. of papers.	Subject.	No. of papers.
Archæology	1	Insects	3
Birds	8	Mammals	6
Ethnology	1	Mollusks	2
Fishes	21	Recent plants	2
Fossil invertebrates	3	Reptiles	4
Fossil plants	1		

Vol. XIV of the Proceedings is now in the hands of the printer, about 300 pages being in type, including papers 842 to 850.

“BULLETIN” OF THE NATIONAL MUSEUM.

Bulletin 38, which was put in type during the preceding fiscal year, was received from the Public Printer on July 25, 1891. This bulletin, consisting of 227 pages, is entitled “Contributions towards a monograph of the Insects of the Lepidopterous family Noctuidæ of Temperate North America—Review of the species of the genus *Agrotis*,” by John B. Smith.

The manuscript of Parts A, B, C, D, and E of Bulletin 39 were sent to the Public Printer in May and June, 1891, but none of these parts were issued until after July 1. This bulletin under the general title “Instructions to Collectors” will be published in parts as fast as printed, and the parts may finally be combined and issued as one or more bound volumes. The papers to be included, thus far prepared, are as follows:

Part A, Directions for collecting specimens of birds. By Robert Ridgway. Part B, Directions for collecting fossil and recent plants. By F. H. Knowlton. Part C, The preparation of rough skeletons. By F. A. Lucas. Part D, Directions for collecting birds' eggs. By Capt. Charles Bendire. Part E, Directions for collecting reptiles and batrachians. By Dr. Leonhard Stejneger.

The manuscript of Bulletin 40, Bibliography of George N. Lawrence, and of Bulletin 41, Bibliography of Dr. Charles Girard, was sent to the Public Printer on May 28.

The manuscript of “Special Bulletin No. 1”—the first quarto publication undertaken by the Museum—was sent to the Public Printer early in May, and 184 printed pages were revised before July 1. This bulletin is by Capt. Charles Bendire, U. S. Army, and is entitled “Life Histories of North American Birds, with special reference to their breeding habits and eggs.” This work will be illustrated with chromo-lithographic plates.

The first annual report of the American Historical Association (1889) was printed during the year, and the report for 1890 was transmitted to the printer. This association was founded in 1884 for the promotion

of historical studies and the collection and preservation of historical manuscripts. By act of Congress in January, 1889, the Regents of the Smithsonian Institution were authorized to permit the Association to deposit its collections in the Museum.

A large number of papers upon scientific subjects have been published by officers of the Museum and other specialists. These are for the most part based on collections in the Museum, and are referred to by title in the Bibliography, constituting Section IV of this report. The authors of these papers are seventy-nine in number, thirty-three of whom are connected with the Smithsonian Institution or the National Museum. The papers number three hundred and forty-six, and relate to the following subjects:

Subjects.	By Museum officers.	By other investigators.	Total.
American aboriginal pottery.....	1	0	1
Archæology.....	7	1	8
Astronomy.....	1	0	1
Biography.....	1	0	4
Birds.....	15	20	35
Chemistry.....	7	1	8
Comparative anatomy.....	1	2	3
Ethnology.....	9	1	10
Exploration.....	1	1	2
Fisheries and fish-culture.....	34	0	34
Fishes.....	37	22	59
Fossils.....	4	2	6
Geography.....	2	0	2
Geology.....	10	2	12
Graphic arts.....	7	0	7
Historical collections.....	1	0	1
Insects.....	32	8	40
Mammals.....	6	5	11
Marine invertebrates.....	2	0	2
Materia medica.....	1	0	1
Metallurgy.....	0	1	1
Mineralogy.....	1	1	2
Mollusks.....	18	0	18
Öölogy.....	1	0	1
Oriental antiquities.....	2	0	2
Osteology.....	3	0	3
Plants.....	38	5	43
Reptiles and batrachians.....	7	5	12
Transportation and engineering.....	3	0	3
Miscellaneous.....	13	1	14
Total.....	268	78	346

VISITORS.

During the year the total number of visitors to the Museum building was 286,426, and to the Smithsonian Institution 111,669.

The monthly register of visitors during the last fiscal year is as follows:

Year and month.	National Museum building.	Smithsonian building.
1890.		
July	17,788	8,298
August	32,138	11,435
September	25,329	10,365
October	21,323	9,731
November	21,715	7,783
December	18,762	8,227
1891.		
January	24,005	8,262
February	26,825	10,458
March	26,112	10,019
April	26,294	9,767
May	25,072	8,832
June	21,063	8,492
	286,426	111,669
Approximate daily average on a basis of 313 days in the year.....	921	346

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 number of visitors to both buildings.
1881	150,000	150,000
1882	167,455	152,744	320,199
1883	202,188	104,823	307,011
1884	195,322	91,130	286,452
1885 (January-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	149,618	524,461
1889-'90	274,324	120,894	395,218
1890-'91	286,426	111,669	398,095
Total	2,398,375	1,081,681	3,480,056

LECTURES AND MEETINGS OF SOCIETIES.

Following the practice of previous years, the lecture hall of the Museum has been granted for lectures and meetings of numerous scientific societies. A statement of the meetings held between July, 1890, and July, 1891, is appended.

1890.

Photographers' Association, August 12-15.

Association of Official Agricultural Chemists (eighth meeting), August 28.

American Ornithologists Union, November 18-20.

American Historical Association (seventh annual meeting), December 29-31.

Joint meeting of the American Economic Association and the American Forestry Association, December 30.

1891.

National Dairy and Food Commissioners' Association, January 14 and 15.
 National Geographic Society, March 13, April 10, April 24, May 1, May 29.
 National Academy of Sciences, April 21.

The usual course of Saturday lectures was omitted this year. Mr. Thomas Wilson, curator of prehistoric anthropology, gave a series of eight lectures. The first four lectures related to art and architecture of prehistoric times. These were delivered on February 4, 7, 11, 14. The other four were as follows: May 13, Prehistoric Anthropology at the French Exposition. May 16, Ancient Industries, Charms and Amulets (illustrated); May 21, History of Human Habitations (illustrated); May 23, Anthropological Congresses and Prehistoric Museums.

STUDENTS.

It has always been one of the aims of the National Museum to aid students and others engaged in scientific work by lending them material to be used in connection with their scientific researches. The following statement has reference to the more important transactions of this kind during the year: skins, alcoholics, and skulls of North American rodents were sent to Dr. J. A. Allen, American Museum of Natural History, New York; a series of bats to Dr. Harrison Allen, Philadelphia, Pa.; skulls of otters and badgers to Dr. E. A. Mearns, U. S. Army, Fort Snelling, Minn.; bird-skeletons to Dr. R. W. Shufeldt, Takoma Park, D. C.; bird-skins to Mr. George N. Lawrence, New York city, N. Y.; South American Devonian fossils to Prof. J. M. Clarke, Albany, N. Y.; turtles to Dr. G. Baur, Clark University, Worcester, Mass.; fishes to Prof. D. S. Jordan, Bloomington, Ind.; invertebrate fossils to Dr. W. B. Clark, Johns Hopkins University, Baltimore, Md.; mammal-skins to Walter E. Bryant, California Academy of Sciences, San Francisco, Cal.; geological material to the Geological Survey of Arkansas; crustaceans to Prof. H. A. Ward, Rochester, N. Y.; stone implements to the Bureau of Ethnology, Washington, D. C.; bird-skins to William Brewster, Cambridge, Mass.; rocks to Prof. H. D. Campbell, of Washington and Lee University, Lexington, Va.; bird-skins to C. B. Cory, Boston, Mass.; bird-skins to American Museum of Natural History, New York; clays and earth to Dr. A. M. Edwards, Newark, N. J.; lizards to Prof. E. D. Cope, Philadelphia, Pa.

Several students have availed themselves of the privilege of examining the collections in the Museum. Dr. George K. Cherrie, ornithologist of the Costa Rica National Museum, has examined the collection of Costa Rica birds, and a similar opportunity was also afforded to Mr. Charles A. Keeler, of Berkeley, Cal., while engaged in a special investigation of the origin of color in birds. Dr. O. P. Hay, of Irvington, Ind., spent several weeks in the department of reptiles and

batrachians, studying the material bearing upon the herpetology of Indiana.

SPECIAL RESEARCHES BY CURATORS AND OTHERS.

The curators of the Museum in addition to their regular duties have made special studies of the collections under their charge, and these investigations have resulted in the publication of several important and interesting papers in the publications of the Smithsonian Institution and the National Museum. During the first three years of the occupancy of the Museum building, or from 1881 to 1884, the Reports of the Museum were very limited in extent, owing to the fact that the collections had not been properly arranged for study; but during and since 1884 a large number of special studies of collections have been made both by the curators and by collaborators of the Museum. These results have been for the most part published in the Annual Reports and in the "Proceedings" of the Museum. The following list represents the papers published in the Museum reports, commencing with 1884:

1884.

- Throwing-sticks in the National Museum. By Otis T. Mason.
 Basket-work of the North American Aborigines. By Otis T. Mason.
 A study of the Eskimo Bows in the U. S. National Museum. By John Murdoch.
 On a Spotted Dolphin, apparently identical with the *Prodelphinus doris* of Gray. By Frederick W. True.
 The Florida Muskrat, *Neofiber Alleni* True. By Frederick W. True.
 On the West Indian Seal, *Monachus tropicalis* Gray. By Frederick W. True and F. A. Lucas.

1885.

- The George Catlin Indian Gallery in the U. S. National Museum, with Memoir and Statistics. By Thomas Donaldson.

1886.

- The Meteorite Collection, a catalogue of meteorites represented November 1, 1886. By F. W. Clarke.
 The Gem Collection. By George F. Kunz.
 The Collection of Building and Ornamental Stones; a handbook and catalogue. By George P. Merrill.
 The Collection of Textiles; List of Fibers and Fabrics. By Romyn Hitchcock.
 Preparation of Microscopical Mounts of Vegetable Textile Fibers. By Romyn Hitchcock.
 How to collect Mammal Skins for Purposes of Study and for Mounting. By William T. Hornaday.

1887.

- Cradles of the American Aborigines. By Otis T. Mason.
 Notes on the artificial deformation of children among savage and civilized peoples. By Dr. J. H. Porter.
 The Human Beast of Burden. By Otis T. Mason.
 Ethno-Conchology. A study of Primitive Money. By Robert E. C. Stearns.
 A Preliminary Catalogue of the Eskimo Collection in the U. S. National Museum, arranged geographically and by uses. By Lieut. T. Dix Bolles, U. S. Navy.

- The Extermination of the American Bison, with a sketch of its discovery and life-history. By William T. Hornaday.
- The Preservation of Museum specimens from insects and the effect of dampness. By Walter Hough.

1888.

- The Coast Indians of Southern Alaska and Northern British Columbia. By Lieut-Albert P. Niblack, U. S. Navy.
- A Catalogue of the Hoppisley Collection of Chinese Porcelain, with a sketch of the history of the ceramic art in China. By Alfred E. Hoppisley, of the Imperial Chinese customs service.
- The Expedition to Funk Island, with observations upon the history and anatomy of the Great Auk. By Frederick A. Lucas.
- Fire-making Apparatus in the U. S. National Museum. By Walter Hough.
- The Collection of Korean Mortuary Pottery in the U. S. National Museum. By Pierre Louis Jouy.
- A study of Prehistoric Anthropology. By Thomas Wilson.
- Ancient Indian Matting; from Petit Anse Island, Louisiana. By Thomas Wilson.
- Results of an inquiry as to the existence of man in North America during the paleolithic period of the stone age. By Thomas Wilson.

1889.

- The Museums of the Future. By G. Brown Goode.
- The Ethnology and Antiquities of Easter Island. By William J. Thomson, paymaster, U. S. Navy.
- Aboriginal Skin-dressing. By Otis T. Mason.
- The Puma or American lion. By Frederick W. True.
- Animals recently extinct or threatened with extermination. By Frederic A. Lucas.
- The development of the American rail and track, as illustrated by the collection in the U. S. National Museum. By J. Elfreth Watkins.
- Explorations in Newfoundland and Labrador in 1887 made in connection with the cruise of the U. S. Fish Commission schooner *Grampus*. By Frederic A. Lucas.
- On a bronze Buddha in the U. S. National Museum. By Charles De Kay.

1890.

- The Humming Birds. By Robert Ridgway.
- White-line engraving for relief printing in the fifteenth and sixteenth centuries. By S. R. Koehler.
- The methods of fire-making. By Walter Hough.
- The Ulu, or woman's knife, of the Eskimo. By Otis T. Mason.
- The Ancient Pit-dwellers of Yezo. By Romyn Hitchcock.
- The Ainos of Yezo, Japan. By Romyn Hitchcock.
- Hand-book for the department of geology in the U. S. National Museum. Part I. Geognosy. The Materials of the Earth's Crust. By George P. Merrill.
- The Catlin collection of Indian paintings. By Dr. Washington Matthews, U. S. Army.
- The Log of the *Savannah*. By J. E. Watkins.
- Anthropology at the Paris Exposition. By Thomas Wilson.

A list of the special papers published in this Report will be found at the beginning of section III.

FINANCE, PROPERTY, SUPPLIES, AND ACCOUNTS.

The following statement relating to cases and other furniture, and to the supplies and accounts of the Museum for the fiscal year 1890-91 has been prepared by Mr. W. V. Cox, chief clerk.

PRESERVATION OF COLLECTIONS.

The appropriation for preservation of collections for the fiscal year ending June 30, 1891, is \$140,000. The disbursements are as follows:

For salaries or compensation, \$117,300.52; for specimens, \$6,211.40; for general supplies, \$3,052.32; for stationery, \$1,653.02; for books and periodicals, \$825.40; for travel, \$1,114.78; for freight and cartage, \$1,862.57; a total of \$132,020.01, which leaves an unexpended balance of \$7,979.99 to meet outstanding liabilities June 30, 1891.

FURNITURE AND FIXTURES.

The appropriation for furniture and fixtures, 1891, is \$25,000; the disbursements are as follows:

For salaries or compensation, \$14,212.52; exhibition cases, with designs and drawings for same, \$1,331; drawers, trays, boxes, etc., \$448.08; frames, stands, miscellaneous woodwork, \$330.52; office furniture and other fixtures, \$588.22; lumber, paints, oils, brushes, \$1,929.45; tools, glass, hard ware, brackets, and interior fittings for cases, \$1,930.49; apparatus, glass jars, and vials, \$146.42; plumbing, tin, lead, etc., \$282.72; rubber tubing for rendering cases insect proof, \$105.04; traveling expenses, \$5; making a total of \$21,309.46, and leaving a balance on hand of \$3,690.54 to meet outstanding liabilities for cases, plate glass, lumber, etc.

Detailed list of cases, unit tables, fixtures, etc., made or furnished during the year by persons outside the Museum:

Three mahogany wall cases, \$730; 2 mahogany double-width cases (for lay figures), \$375; 2 unit tables, special size, \$108; 1 mahogany case for shrike group, \$50; mahogany cornice for Liverpool case, \$15; 1 pine pedestal and shade, \$17; designs and drawings for cases, \$36; drawers, trays, boxes, etc., \$448.08; frames, stands, miscellaneous woodwork, \$330.52; office furniture and other fixtures, \$588.22.

Lumber, needed supplies, fittings, etc., have been bought as follows: Lumber, \$1,364.05; glass, \$954.56; hardware and fittings for cases, \$707.13; cloth, cotton, etc., linings for cases, \$108.03; apparatus, \$84.50; glass jars and vials, \$61.92; tools, \$73.67; paints, oils, brushes, \$565.40; tin, lead, etc., \$268.48; rubber tubing for rendering cases insect proof, \$105.04; iron brackets for cases, \$87.10; plumbing, \$14.24; traveling expenses, \$5.

Cases made in the Museum workshops during the year 1891:

Two mahogany table cases; 3 mahogany table cases with sloping tops; 7 walnut table cases; 6 book cases; 13 half unit insect-proof cases; 4 insect proof storage cases, two of them with 50 compartments each; 13 tops for cases, sloping, upright, etc.; 9 card catalogue cases.

Cases repaired, remodeled, extended, and made insect proof by lining them with metal and fitting the doors with rubber tubing:

One wall case, department of vertebrate fossils, extended; 6 half unit cases, department of mammals, made insect proof; 53 quarter unit cases, department of ornithology, made insect proof; 5 table cases, department of botany, made insect proof; 3 table cases for special deposit, Department of Agriculture, made insect proof; 1 table case, department of botany, repaired; 1 Kensington case, remodeled; 1 case for domestic fowls, remodeled.

Screens, frames, unit boxes, drawers, diaphragms, bases, trays, etc., made in the Museum workshops during the year 1890-'91:

Two mahogany table screens; 11 pine screens; 79 mahogany label frames; 103 oak, ash, cherry, and pine label frames; 7 pine picture frames; 361 stands for specimens; 8 mahogany table tops; 1 walnut table top; 5 pine table tops; 1 pine, upright desk, for office work; 1,729 pine trays, for specimens, stored in cases; 358 drawers, cherry, poplar, and pine, for cases; 90 unit boxes, for exhibition cases; 48 costume boxes; 23 pine diaphragms, for cases; 78 walnut and pine bases, for specimens; 2,943 blocks, for the exhibition of minerals; 4 pine card catalogue boxes; 7 tank boxes, for receivers for specimens; 238 boxes for storing and shipping specimens; 433 shelves, for cases, etc.; 180 zinc partitions, for files cases; 184 pine partitions, for files cases; 433 shelves, for cases; 11 brackets, for exhibition purposes; 200 tin label holders; 1 case for negatives, photographer's department; 6 presses, for specimens, department of botany.

Screens, frames, drawers, trays, bases, etc., extended, refitted, reglazed, painted, and otherwise repaired, during the year 1890-'91:

One hundred and sixteen wing frames, glazed and fitted with hinges; 2 wall-screens extended; 67 ash screens repaired; 1 pine screen repaired; 1,193 pine trays fitted in cases; 35 pine trays altered; 110 unit boxes stained; 78 bases painted; 33 diaphragms for cases, painted; 52 costume boxes altered, stained, and glazed; 3,362 blocks painted; 101 windows reglazed.

HEATING AND LIGHTING.

The appropriation for heating and lighting, 1891, is \$12,000. Following are the disbursements:

For salaries or compensation, \$5,084.91; coal and wood, \$2,766.96; gas, \$1,233.84; electric supplies, \$905.68; electric work, \$7.50; telephones, \$604.40; rental of call boxes, \$100; heating supplies, \$448.95; traveling expenses, \$5.42, making a total of \$11,157.66, and leaving on hand a balance of \$842.34 to meet outstanding liabilities.

In addition to the items mentioned in the detailed list, much work of a general nature has been accomplished, and while the routine has not differed materially from that of former years, the total amount expended for services is somewhat less than that of last year.

Frequent repairs in the large flat roof of the Museum building have been necessary, and pending the anticipated laying of a granolithic pavement, the floors have been patched in many places; the trenches beneath the Museum have been thoroughly cleaned and whitewashed and the electric wires therein put in order, so far as possible; the north balcony has been painted and the walls calcimined, and in the rooms adjacent to the eastern entrance, and in the balcony and stairway above them, the walls have been calcimined and the woodwork painted.

The moving of the heavy exhibits, which occasionally becomes necessary in order to place suitably in the series the valuable objects which from time to time come into possession of the Museum, is an important feature in the duty of the force. The articles, many of them of great weight, must be handled with skill in order to prevent injury to themselves, to other objects, or to the building. The superintendent has placed rollers under the large cases, which serve to remove them from any dampness of the floor, and allow them to be moved with all

the facility possible under the circumstances, and in changing the position of the engine "John Bull," it was found necessary to construct a railway track for the purpose.

It is worthy of mention that the painters in the superintendent's force are frequently called on to trace, color, and letter the large charts and maps required by the different curators, or used in illustrating the scientific lectures given in the Museum hall.

By economy of administration, the Museum has been able to increase its insufficient electric-light plant, so that now it has a small dynamo, which supplies twenty-five arc lights, of 2,000 candle power each. This is only about one-half the number required for a satisfactory illumination, but by screening off the courts it was found possible to light the halls so that the building could be opened for the admission of the American Medical Association on the evening of May 7, and for the National Geographic Society on the evening of May 29, 1891.

With the limited means available, no elaborate form of installation of the electric-light plant could be adopted, and it was necessary to pass the wires loosely from burner to burner around the building. It is hoped that a future appropriation will make it possible to remedy the defects in the present system, and will permit the purchase of a dynamo of such power that the whole building can occasionally be thrown open at night, for the accommodation of those who can not avail themselves of the regular hours of admission, as well as for the various scientific associations of Washington and the country, as often earnestly requested.

The changes found necessary in the heating apparatus, such as adjusting radiators, making connections with steam pipes, etc., have this year, as last, been made by the regular force without outside help. Several improvements in the boiler room, among which may be mentioned inclosing the pipes in a wooden casing, removing partitions and fitting up the vault for dynamo used to run the system of electric lights in the building, have been completed in the same way.

As stated in the report of last year, the boilers, especially those of the Smithsonian building, have been for some time in an extremely unsatisfactory condition. Proposals have accordingly been invited for the purchase and setting in place of new ones, and an appropriation of \$3,000, which becomes available at the close of the present fiscal year, has been made by Congress for this purpose.

Mention was also made in my last report of the necessity for removing the decayed wooden floors in the Museum and substituting therefor granolithic or artificial stone pavement. Five thousand dollars having been appropriated for this object, proposals for the necessary pavement have been invited.

The appointment by the secretary of the Smithsonian Institution, of Mr. J. M. Parkhurst as engineer, dates from December 1, 1890. In

deciding this appointment, the Museum was much indebted to the courtesy of Commodore Melville, U. S. Navy, who, in compliance with the request of the Secretary, appointed Passed Assistant Engineer Baird, and Assistant Engineer Norton, of the Navy, as a board to examine the candidates.

There were twenty-five applicants for the position, eight of whom completed the examination. The questions, fifty-five in number, were mostly on practical engineering and practical electric lighting. The papers of Mr. Parkhurst reached a percentage of 83.81; those of two other candidates, Mr. F. M. Stromberger and Mr. R. H. Speake were but slightly less. The examining board pronounced the percentage reached by several of the competitors remarkable, considering the character of the questions submitted.

The complicated nature of the duties connected with this position, both in the Smithsonian Institution and the Museum, renders apparent the necessity of having the appointment depend upon a competitive examination, which is a thorough test of ability.

In the autumn of 1890 permission was given by Mr. Clark, the architect of the Capitol, to remove from the crypt beneath the building the original plaster model of the bronze statue by Crawford, which surmounts the dome, and to deposit the same in the Museum.

The work of removing the fragments of this cast was begun in October, 1890. A brick and cement base was prepared in the center of the rotunda and the erection and restoration of the statue were begun on the 8th of December. The model, which had remained for nearly thirty years in the basement of the capitol, was found to be so broken, many of the more delicate parts being entirely gone, that its complete restoration from the fragments seemed impossible. In addition to difficulties of this sort, in order to move and place safely in position the immense pieces of the statue which remained intact, it was found necessary to saw them carefully into smaller parts, which after being lifted into place were securely reunited. Great interest was manifested in the restoration, it being observed that many persons came regularly to watch its progress, and it was a matter for congratulation when the difficult work was finally satisfactorily completed. The restoring was done by an employé of the Museum, Mr. Theodore Mills, son of Clark Mills, who in 1860 cast from this model the statue in bronze for the Capitol.

The preparation for the World's Columbian Exposition has been begun under the direction of Dr. Goode, representative of the Smithsonian Institution and National Museum. As the most skillful workmanship is required in this connection, many of the best employés of the museum have been transferred to the Exposition roll, and a few others of known efficiency have been appointed.

Mr. R. E. Earll, who took part in the Fisheries Exhibition in London, ~

in 1882, in the World's Cotton Exposition at New Orleans, in 1884, and who was superintendent of the Museum display during the Centennial Exposition of the Ohio Valley at Cincinnati, in 1888, has been made chief special agent of the Smithsonian for the World's Columbian Exposition, and will devote his entire energy to the preparation and installation of the Museum exhibit.

The wording of the bill making the appropriation for the Columbian Exposition renders the employment of clerical help upon the Exposition roll virtually impossible, so that the necessary work of this class must be done by the employes of the Museum. The preparation and settlement of accounts, in this as in other recent expositions, will devolve upon the clerks of this office, in addition to their other duties.

Many requests have been received this year, as in the past, from museums, scientific associations, universities, colleges, etc., in this and other countries, for information in regard to the Museum standard cases, of various types, in compliance with which cyanotypes of the cases, with details as to cost of construction, have frequently been sent out. Among the institutions asking for information of this sort during the year may be mentioned the American Museum of Natural History and the Academy of the Sacred Heart, New York City; the College of Fine Arts, Syracuse, N. Y.; the College Museum, Bloomington, Ind.; the State University, Iowa; the Academy of Natural Sciences, San Francisco; the University of Toronto, and the Royal Society of Northern Antiquaries, Copenhagen.

In this connection I would note the fact that several new designs for cases, which prove highly satisfactory, have been made by the engineer of property, and in some instances, by uniting the most desirable features of different cases, others of a new pattern have been constructed under the direction of Mr. Watkins, which prove admirably suited to the purposes required.

The work of the Museum, which has been gradually but surely extending itself in various directions without a commensurate increase of the force, has been accomplished only by the means of the most faithful and energetic service on part of the employes, many of whom have been frequently required to work beyond the regular hours. It should be added that a request for such extra service has always been most cheerfully complied with.

CORRESPONDENCE AND REPORTS.

The system adopted several years ago for conducting the correspondence still prevails and has been found on the whole satisfactory. This division of the Museum is under the charge of Mr. R. I. Geare, assisted by a corps of stenographers and typewriters. The number of correspondents of the Museum is constantly increasing.

The following geographical statement of letters written in this office

includes only those containing technical information on various subjects:

Locality.	Number of letters written.	Locality.	Number of letters written.
Alabama.....	29	Texas.....	81
Alaska.....	4	Utah.....	26
Arizona.....	41	Vermont.....	11
California.....	147	Virginia.....	111
Colorado.....	36	Washington.....	4
Connecticut.....	69	West Virginia.....	38
Delaware.....	1	Wisconsin.....	43
District of Columbia.....	1,463	Wyoming.....	11
Florida.....	69	Foreign countries:	
Georgia.....	27	Africa.....	7
Idaho.....	13	Asia.....	1
Illinois.....	130	Australia.....	15
Indiana.....	62	Austria.....	2
Indian Territory.....	7	Belgium.....	2
Iowa.....	84	Canada.....	53
Kansas.....	27	Central America.....	12
Kentucky.....	32	China.....	28
Louisiana.....	18	East Africa.....	1
Maine.....	32	England.....	103
Maryland.....	94	Egypt.....	2
Massachusetts.....	187	France.....	37
Michigan.....	83	Germany.....	33
Minnesota.....	55	Greece.....	2
Mississippi.....	13	Hungary.....	3
Missouri.....	48	Italy.....	8
Montana.....	31	India.....	4
Nebraska.....	33	Ireland.....	3
Nevada.....	3	Japan.....	4
New Hampshire.....	16	Mexico.....	23
New Jersey.....	118	Norway.....	2
New Mexico.....	70	Prussia.....	5
New York.....	497	Russia.....	9
North Carolina.....	37	Scotland.....	7
North Dakota.....	4	South America.....	8
Ohio.....	148	South Africa.....	14
Oklahoma Territory.....	3	Spain.....	7
Oregon.....	19	Straits Settlements.....	2
Pennsylvania.....	287	Sweden.....	7
Rhode Island.....	10	Switzerland.....	2
South Carolina.....	44	Turkey.....	7
South Dakota.....	27	West Africa.....	2
Tennessee.....	113	West Indies.....	2

In addition, about 3,000 letters pertaining to general Museum correspondence have been prepared in this office. In all, about 8,000 official papers have been prepared during the year for the signature of the Secretary and the Assistant Secretary.

This division has been charged with the acknowledgments of all

gifts to the Museum, and with the preparation of reports upon material sent to the Museum for examination. The preparation and editing of the annual reports of the Museum, as well as the proof-reading of the same, also form a part of the work of this office.

PREPARATION OF LABELS.

During the year 4,126 forms of labels were printed, as shown in the following tables, 24 copies of each form being printed:

Department.	No. of forms.	Department.	No. of forms.
Geology.....	2,086	Ethnology.....	150
Materia Medica.....	1,082	Graphic Arts.....	130
Transportation and Engineering.....	326	Pre-historic Anthropology.....	103
Oriental Antiquities.....	241	Total.....	4,126

BUILDINGS AND LABOR.

POLICE AND PUBLIC COMFORT.

Mr. Henry Horan, superintendent of buildings, remains in charge of this department, the employés of which consist of watchmen, painters, carpenters, laborers, cleaners, and attendants. Mr. C. A. Steuart is assistant superintendent. The force of carpenters number eight or nine, who are kept continually busy constructing cases and shelves, remodeling old cases, making repairs to buildings, etc. Only two painters are kept constantly on the Museum roll, and their time is completely occupied in keeping the buildings and fixtures in proper condition.

From the report of the superintendent the following statements are quoted, in order to convey an idea as to the character of the work accomplished in this department:

1896.

July.—A dynamo engine was placed in the engine room. A connection of water and gas pipe was made for the accommodation of the mammal department. Laborers were engaged in remodeling the south entrance preparatory to making changes in cases, shelving, and other appointments.

August.—A new gas engine to run the dynamo was placed in the engine room. The lecture hall and the east balcony were cleared for the meeting and exhibit of the Photographers' Association. The marble statue of Daguerre was placed in the rotunda and unveiled August 15. The collection of oriental antiquities was transferred from the west hall to the southeast corner of the north hall. The lecture hall was put in order for the meeting of the Association of Official Agricultural Chemists, August 28.

September.—Numerous miscellaneous items of work were completed by the mechanics. Mahogany table tops were placed in the exhibition hall of the Smithsonian building. Steam pipes were altered and an extra pipe was placed outside of the Natural History laboratory building for the department of mammals.

October.—Four large pine screens were placed in the east hall. The stairway of the northwest pavilion was painted and the wall wainscoted. The original cast of the Statue of Liberty was placed in the rotunda of the building.

November.—A pedestal was placed in the rotunda of the building for the plaster statue of Liberty. The lecture hall was prepared for the meetings of the American Ornithologists Union, November 18.

December.—J. H. Parkhurst was appointed engineer in charge of heating apparatus, December 1. The lecture hall was prepared for the meeting of the American Histori-

cal Association December 31. The railing formerly around the boat hall was removed and placed in the lecture hall. Owing to the cold weather two laborers were detailed for special duty in the engine room. Plumbers were busy repairing leaks in sewer pipes. A large radiator in the superintendent's office was removed and a new one substituted.

1891.

January.—The wires running from the boiler room to the various electric lights in the building were inspected and repaired. The National Dairy and Food Commissioners' Association met in the lecture hall December 14. The building was wired for electric lights.

February.—The transportation exhibit in the eastern hall was rearranged, necessitating the services of the greater part of the laboring force. Changes were made in the boiler room, whereby considerable more room and space were gained. Two large pine screens were made and placed at the entrance to the rotunda balcony in the south hall.

March.—The rooms on the south side of the east entrance were newly painted. The office rooms on the west balcony were frescoed and painted. The large painting, "The March of Time," by Henry Sandham, deposited by the artist, was placed in the north hall. The basement of the Smithsonian building was thoroughly cleaned and whitewashed.

April.—A large force of laborers was engaged in preparing an exhibit of patents in the lecture hall, in connection with the Patent Centennial celebration. Laborers were engaged for several days in arranging lecture hall and office rooms for the meetings of the National Academy of Science. The roof on the building at the west end of the Smithsonian was removed.

May.—The electric lights were placed in order for the visit of the Medical Congress on May 7. The cases and material in the anthropological hall of the Smithsonian were entirely rearranged necessitating the detail of a large laboring force. A leak in the gas main at the south entrance was repaired by the Museum plumbers and laborers. A large shed was prepared for the taxidermists' work.

June.—Twenty ½-unit cases were removed from the west balcony to other departments of the Museum, being replaced by two large wall storage cases. A force of laborers was engaged for several days in preparing the shed south of the Smithsonian building for the taxidermists in connection with the World's Fair. The work of removing the old roof from the chapel in the Smithsonian building is under way, requiring a large force of laborers.

THE WORK OF THE MUSEUM PREPARATORS.

TAXIDERMISTS.

In September, 1890, the force of taxidermists was reorganized. At that time it consisted of only three regular taxidermists and one volunteer, and the number was not increased until the spring, when one taxidermist was designated to take general charge of the work under superintendence of the curator of mammals. The skins which had accumulated in the vats, some 400 in number, were examined and their exact condition (for mounting or addition to the reserve series) was ascertained. A card-catalogue of the entire collection of skins was prepared, detailed information regarding each skin being obtained. In March, 1891, preparations were commenced for an exhibit of mammals at the World's Columbian Exposition. A plan was submitted and approved, steps being immediately taken to obtain the necessary material for exhibition. The force of taxidermists was then increased and a special workshop was fitted up for their use, Mr. William Palmer being appointed chief taxidermist. The number of regular taxidermists was increased to six, and one special laborer was also added.

Collection of mounted domestic animals.—The work of mounting typical specimens of domestic birds has been continued by Mr. Nelson R.

Wood, who completed sixty-nine specimens during the year. The mounting of most of these skins was a difficult task. A number of alcoholic specimens were also mounted. The material development of the collection of thoroughbred domestic fowls and pigeons, which was increased by the addition of forty-four specimens, is largely due to the energy and zeal of Mr. Wood, who has endeavored to show prominently the distinguishing characteristics of the various breeds.

OSTEOLOGICAL PREPARATOR.

Mr. F. A. Lucas, osteologist, states that the preparation of osteological specimens for the exhibition and study series has made favorable progress. The amount of work accomplished is indicated in the following statement:

	Mammals.	Birds.	Reptiles.	Fishes.	Total.
Received in the flesh:					
Entire skeletons	31	51	1	1	84
Skulls	1				1
Cleaned:					
Entire skeletons	16	65	3	6	90
Incomplete skeletons	5		1	2	8
Skulls	428	1	2	3	434
Mounted:					
Entire skeletons	3	16	4	2	25
Limbs and other pieces	2	3			5
Skulls			3		3
Total.....	486	136	14	14	650

In addition, a number of specimens of vertebrate fossils were cleaned, repaired, and mounted, molds and casts of combs made for domestic birds, 13 rare and valuable eggs repaired, and 150 specimens arranged for the synoptic series of invertebrates. The specimens of domesticated animals and the small series contained in the taxidermic collection have been completely rearranged and installed in new cases. As in previous years, Mr. Scollick has assisted in the preparation of vertebrate fossils and other osteological material.

PHOTOGRAPHER.

Mr. T. W. Smillie, photographer, reports that he has made 511 negatives during the year, as follows:

Mammals	222
Ethnology.....	85
Marine invertebrates.....	14
Prehistoric anthropology.....	11
Graphic arts.....	3
For the Smithsonian Institution.....	51
For the National Zoölogical Park.....	45
Miscellaneous.....	80

Two thousand and twenty-four silver prints, made during the year, were distributed as follows:

Mammals	430
Ethnology	191
Prehistoric anthropology	30
Marine invertebrates	29
Graphic arts	44
For the Smithsonian Institution	153
For the National Zoölogical Park	95
For the Department of State	450
Miscellaneous	602

In addition to these, 199 cyanotypes were made, of which 147 were for the Museum and 52 for the Zoölogical Park; 92 transparencies were prepared for the purpose of illustrating public scientific lectures, and 5 photographs enlarged. Numerous photographic outfits were supplied for scientific expeditions and for the World's Fair Commissioners; several students instructed in the methods of photography, and a good deal of experimental work done.

As in past years, the photographic work of the Fish Commission was performed under the supervision of Mr. Smillie. This included 1,131 cyanotype prints, 15 silver prints, and 15 negatives.

DRAFTSMEN.

Mr. W. H. Chandlee and Mr. W. H. Burger have continued the preparation of illustrations for Museum publications. Drawings have been made of objects belonging to the Abbott and Chatelain African collections; of tablets for Paymaster Thomson's paper on Easter Island; of arrows, powder-horns, lamps, matches, etc., for papers by Prof. Otis T. Mason and Mr. Walter Hough; and also of specimens of marine invertebrates, osteological specimens, and instruments used in taxidermic work. In addition to this a large amount of miscellaneous work has been accomplished, including the sketching and tracing of charts, maps, and diagrams of the arrangement of exhibits, lettering and engraving of labels, etc.

COLORIST.

Mr. A. Zeno Shindler has been occupied during the year in painting in oil for the department of ethnology representations of the various races of men, and of a Japanese native; in coloring a number of photographs of Indians and negroes from the collections of Prince Roland Bonaparte; in representing in water colors the process of silk reeling, and the preparation of vegetable wax in Japan; in restoring and repairing a bust of King Kalakana of the Sandwich Islands, and in painting life-sized casts of a Samoan, a Dyak, and a negro. He has also prepared a map showing the location of the Indian tribes in the United States, and a relief map of one of the St. Guan mining districts of California.

H.—ACCESSIONS.

Ten years ago the National Museum moved into its new building, and the present year marks the close of a very important decade in its history. The increase in the collections during this period has been unexpectedly large, the accessions from all sources now numbering 3,028,738 specimens. In 1882, when the first census of the collections was made, the total number of specimens was estimated at less than 200,000. The totally inadequate space provided for this vast accumulation of material has been so frequently commented upon in previous reports, that it is not necessary to reiterate the recommendations to Congress for another building.

The total number of accessions to the Museum during the year is 1,187 (Nos. 23,341-24,527), inclusive).

A geographical review of the more important accessions during the year is here presented. This is preceded by a brief classified statement showing the most valuable contributions of the year.

STATEMENT OF THE MOST IMPORTANT CONTRIBUTIONS OF THE YEAR.

(Arranged by Departments in the Museum.)

ANTHROPOLOGY.

Archæology.—A large collection of prehistoric copper and galena objects, chiefly from Wisconsin and Ohio, purchased by special appropriation of Congress from Frederick S. Perkins, of Madison, Wis.; anthropological objects from the site of the ancient aboriginal fish-weir near Claymont, Del., presented by Dr. Hilborn T. Cresson, Philadelphia, Pa.; sandstone rock containing human bones, found in Florida and transmitted by Judge John G. Webb, Osprey, Fla.; archæological specimens from the base of Roan Mountain, North Carolina, collected by Mr. P. L. Jouy, of the National Museum.

Ethnology.—A collection of ethnological objects from the native tribes of Angola, Africa, including medicine horns and musical instruments, presented by Mr. Héli Chatelain, of Vineland, N. J.; a fine collection of spears, shields, bows, swords, birds' skins, and personal ornaments from the Kilima-Njaro region, East Africa, collected and presented by Dr. W. L. Abbott, of Philadelphia, Pa.

ZOOLOGY.

Mammals.—Two pairs of interlocked elk antlers from Montana, deposited by Hon. Clinton L. Merriam, Locust Grove, N. Y.; four skins of Belding's Spermophile, from Mr. L. Belding, Stockton, Cal.

Birds' skins.—A valuable collection comprising 427 specimens of birds' skins from the island of Yesso, Japan, and containing species new to the collection, purchased from Harry V. Hensen, Hakodadi, Japan;

194 specimens of birds from the interior of Honduras, purchased from Mr. Erich Wittkugel, of San Pedro Sula, Republic of Honduras; a collection of birds from South Carolina, containing one species (*Cistothorus mariana* Scott) new to the Museum collection, received from Mr. James E. Benedict, of the National Museum.

Birds' eggs.—An exceedingly valuable collection of nests and eggs received from R. MacFarlane, esq., of the Hudson Bay Company; 15 specimens of birds' eggs, 15 specimens of eggs of the rare Franklin's grouse (*Dendragapus franklinii*), 4 eggs of the Greater Yellowlegs (*Totanus melanoleucus*), 9 eggs of the Canadian Ruffed grouse (*Bonasa umbellus togata*), were presented by Mr. W. E. Traill, of Fort St. James, British Columbia; 8 nests and 13 eggs, all collected in the District of Columbia, were received from Dr. Hugh M. Smith, of the U. S. Fish Commission.

Fishes.—A collection of fishes, made by the U. S. Fish Commission steamer *Albatross*, from the Galapagos Islands and Panama, received from the U. S. Fish Commission; a collection of deep-sea fishes from the Atlantic Ocean and the Mediterranean Sea, received through Mr. Léon Vaillant, from the Museum of Natural History, Paris, France; fishes collected in the Bay of Guaymas, Sonora, Mexico, received from Prof. B. W. Evermann, Greencastle, Ind.

Reptiles and batrachians.—A very interesting collection of reptiles from Mr. Charles K. Worthen, Warsaw, Ill.; alcoholic specimens of lizards from Arizona, collected by P. L. Jouy, of the National Museum; a collection of reptiles from Idaho, made by Dr. C. Hart Merriam, of the Department of Agriculture; several collections of reptiles, made by Charles R. Orcutt, of San Diego, in southern California; reptiles from the Seychelles Islands and the Kilima-Njaro mountains, collected by Dr. W. L. Abbott, of Philadelphia, Pa.

Mollusks.—An interesting collection of marine shells from the coast of Venezuela, including a beautiful series of the Argonaut, received from Mr. R. M. Bartleman of the United States legation at Caracas, Venezuela; a remarkably fine series of *Tritonum femorale* from the Bahama Islands, presented by Mr. Isaiah Greeger of Jacksonville, Fla.; an interesting series of shells and miocene fossils, collected by Messrs. Henry W. Elliott and William Palmer in connection with their visit to the Seal Islands of Alaska; collections from the western Atlantic coast obtained by the naturalists of the Fish Commission.

Insects.—A collection of *Tineidae* including North American and European species, transmitted to the National Museum by the Department of Agriculture; a collection of specimens of Lepidoptera and Coleoptera, collected in California and Washington by Mr. A. Koebele, and transmitted by the Department of Agriculture; an extensive series of North American Microlepidoptera from the Department of Agriculture.

Marine invertebrates.—A collection of Brachyurans from the U. S. Fish Commission; a collection containing 500 specimens of annelids

from Beaufort, N. C., and Willoughby Sand Spit, Virginia, received from Dr. E. A. Andrews of Baltimore, Md.; a collection of echinoderms received in exchange from the Royal Museum of Natural History, Berlin, Germany.

Invertebrate fossils (Paleozoic).—A valuable collection comprising 44 species of Cambrian fossils, received from the Geological Survey of Sweden, Stockholm; 232 specimens of Bala fossils, received from Mr. Thomas Ruddy of Cowen, Wales.

(Mesozoic.)—Forty-seven specimens of cretaceous fossils from Alabama, Mississippi, Texas, and Colorado, received from the United States Geological Survey; a collection of fossil insect masses, presented by Mr. S. H. Scudder, of Cambridge, Mass.

BOTANY.

Fossil plants.—A collection of carboniferous fossil plants, received from Dr. J. H. Britts, of Clinton, Mo.; fossil plants from Victoria, New South Wales, presented by Baron Ferd von Müeller, Royal Botanical Gardens, Australia; seven specimens of fossil plants from the Devonian and Carboniferous formation of Ohio, presented by Prof. Edward Orton, of Columbus, Ohio.

Recent plants.—A collection of dried plants from India, presented by the Royal Botanic Garden, Calcutta, India, through Dr. G. King, superintendent; a collection of Norwegian mosses, presented by Dr. I. Hagen, Trondhjem, Norway; specimens of Florida plants, presented by Mr. Otto Vesterlund, Storvreta, Sweden.

GEOLOGY.

Minerals.—A collection of Russian minerals, received from Mrs. Mary I. Stroud, of Washington, D. C.; a superb series of mineral specimens, consisting mainly of silver, copper, and cerussite, from the Broken Hill mines in Australia, presented by Mr. Walter H. Koehler; the gem collection of the late Dr. Joseph Leidy, containing 400 cut stones, purchased from Dr. Leidy's estate.

Rocks and ores.—A large series of ores and economic minerals from Texas, Mexico, New Mexico, and California, collected by Mr. F. W. Crosby, of Washington, D. C., constituting the most important accession of the year; a fine lot of onyx marble from Prescott, Ariz., presented by Mr. William O. O'Neill; a large study series of ores and rocks, illustrating the quicksilver deposits of the Pacific slopes, received from the U. S. Geological Survey.

MISCELLANEOUS.

Through the courtesy of Mr. Edward Clark, Architect of the Capitol, the original full-size plaster cast of the statue of Liberty, modeled by Mr. Thomas Crawford, was received; a Sechuana bible used by Dr. David Livingston in his journey from the Cape of Good Hope to Lo-

anda, in 1852, presented by Mr. Héli Chatelain, of Vineland, N. J.; manuscripts, drawings, letters, etc., comprising the "Vail papers" relative to the invention and early application of the telegraph, received from the American Historical Association; autograph manuscripts, glass pitcher, wine glasses, silver cake-basket, and other relics of Gen. Washington; a collection of 20 Chinese musical instruments, obtained by Dr. Julius Neumann; 240 colored plates, illustrating the forest flora of the United States, received from the Massachusetts Society for Promotion of Agriculture; model of the vessel *Half Moon*, received from William J. Boyd, of Brooklyn, N. Y.; a model of a Burmese canoe, received from Dr. John Bartlett, of Chicago, Ill.; the electro-magnetic engine for producing reciprocating motion by magnetic attraction and repulsion, invented and constructed by Prof. Joseph Henry in 1831 (this being one of the first applications of electricity for producing power), deposited by Miss Mary Henry; a collection of incandescent lamps, switches, and other apparatus used in 1881 in one of the earliest electric-light plants in America, transmitted by the Hinds-Ketcham Company of Brooklyn, N. Y.; a complete collection of the woods of the Argentine Republic, presented by the Museo de Productos Argentinos, Buenos Ayres.

GEOGRAPHICAL REVIEW OF THE MORE IMPORTANT ACCESSIONS
RECEIVED DURING THE YEAR.

AFRICA.

EAST AFRICA.

Mount Kilima-Njaro and vicinity.—From Dr. W. L. Abbott, of Philadelphia, Pa., has been received a magnificent collection* of spears, shields, bows, swords, wooden dishes, and personal ornaments of the Wa Chaga and Wasai negroes; insects of all orders, a large collection of birds' skins representing many species, reptiles, and mammals; plants, birds' eggs, shells, and photographic negatives illustrating ethnological subjects.

Zanzibar.—From Messrs. Crockett and Harrison, of Bridgeport, Conn., were received two pieces of gum.

NORTH AFRICA.

Algiers.—From Mr. W. W. Rockhill, of Washington, D. C., was received a pair of Algerian spurs.

Tunis.—From Mrs. Emma S. Brinton, of Washington, D. C., was received in exchange, a pottery lamp of green glaze.

Mr. Edward Lovett, of Croydon, England, sent in exchange four

* A catalogue of this collection is published in this volume.

Hoschish pipes from Tunis, and a Moorish lamp from the northern part of Africa.

Judge Jacob J. Noah, of Washington, D. C., transmitted two plates, one made of porcelain and brought from Tunis in 1818.

SOUTH AFRICA.

Cape Town.—Mr. J. H. Brady, Education Bureau, Cape Town, sent a collection of insects.

Mr. W. E. Frye, of Cape Town, transmitted a series of antelope horns.

Griqualand.—Mr. Seal, of Cape Town, through the courtesy of Prof. Cleveland Abbe, of Washington, D. C., sent a beautiful specimen of crocidolite.

Kafirland.—From the British Museum, London, England (through the agency of Mr. Charles H. Read), were obtained, in exchange, twenty-three ethnological objects.

Through Prof. E. J. Loomis, of the United States Eclipse Expedition, were received specimens of rocks from the Kimberley diamond mines.

WEST AFRICA.

Angola.—Mr. Héli Chatelain, of Vineland, N. J., has enriched the Museum collections by several contributions, and other objects of interest have been obtained from him by purchase. Among the specimens received are a collection of rocks, shells, fossil plants, mammals, reptiles, insects, crabs, starfishes, birds' nests, plants, ethnological objects of all kinds, and a collection of Portuguese-African coins.

Rev. William P. Dodson, in charge of the Bishop Taylor Mission, Loanda, transmitted (through Prof. Cleveland Abbe) a Kimbunda hatchet, called "Dikellemba," made by a native smith of the Lunda country, and a basket called "Kinda," made by a native woman of Angola.

Mr. Walter Hough, of the U. S. National Museum, presented a specimen of *Bostrychus cornutus*, representing the imago, larva, and specimen of work.

AFRICA (MISCELLANEOUS).

Mr. Héli Chatelain, of Vineland, N. J., presented hair from the head of a McBamba negro, and a Sechnana bible (Pentateuch) used by Dr. David Livingstone on his journey from Cape of Good Hope to Loanda in 1852, containing the autograph of Dr. Livingstone. Mr. Chatelain also transmitted the skin of a crocodile, obtained from him by purchase.

Mr. W. E. Frye, of Cape Town, sent a specimen of asbestos from the Orange River, Mount Hopetown; a specimen of Iceland spar from Van-

Rhyn-Dorf, a Bushman's stone picked up near Cape St. Francis Lighthouse, skull of Cape leopard (tiger), and a small gourd used as a whistle for signaling.

Rev. H. S. Gorham, of Dartford, Kent, England, sent in exchange 33 specimens representing 19 species of named African coleoptera.

The H. W. Johns Manufacturing Company, of New York City, transmitted a specimen of asbestos.

From Messrs. Lewishon Brothers, of New York City (through the courtesy of Messrs. Phelps, Dodge & Co.), was received a sample of tin from the interior of Africa.

Mr. Edward S. Schmid, of Washington, D. C., presented a Parrot (*Psittacus erithracus*).

AMERICA.

NORTH AND CENTRAL AMERICA.

From the Agricultural College, Lansing, Mich., through Prof. A. J. Cooke, were received in exchange 40 species of North American coleoptera, 17 of which are new to the collection.

Through Col. Marshall McDonald, U. S. Commissioner of Fisheries, were received from the Fish Commission a collection of 1,128 specimens, representing 33 species of brachyurans and anomouran crustaceans collected by the steamer *Albatross*, and 327 specimens of duplicate echini, also obtained from the collections of the *Albatross*.

From Mr. Charles Palm, of New York City, were received in exchange 90 specimens, representing 41 species of North American coleoptera, either new to the collection or represented by a single specimen.

From the Department of Agriculture, through Prof. C. V. Riley, were received 382 species of lepidoptera; 110 specimens of North American coleoptera representing 54 species, new to the collection, and collected by Mr. H. F. Wickham, of Iowa City, Iowa; a collection of *Tineidae*, containing 900 specimens, and representing about 430 North American species; 1,100 specimens of North American microlepidoptera representing 240 species; 25 species of coleoptera, mostly new to the collection, obtained from a number of specimens sent by Prof. Cooke, of the Agricultural College, Lansing, Mich., for identification.

A large study series of rocks and ores, illustrating the quicksilver deposits of the Pacific slope, was received from the U. S. Geological Survey.

From Prof. J. B. Smith, of New Brunswick, N. J., were received 15 specimens of North American *Noctuidæ* representing 12 species, types of 10 species represented by 12 specimens.

From Mr. Henry Ulke, of the District of Columbia, were received 37 specimens, representing 19 species of rare North American coleoptera.

BRITISH AMERICA.

Canada—British Columbia.—From Mr. W. E. Traill, Fort St. James, Stuart's Lake, were received skins and eggs of Franklin's Grouse (*Dendrogapus franklinii*), and Canadian Ruffed Grouse (*Bonasa umbellus togata*); also eggs of the Greater Yellow-legs (*Totanus melanoleucus*), all of which are rare specimens.

Lake St. John, Quebec.—From Mr. George R. Dana, of Washington, D. C., was received a Landlocked Salmon (*Salmo salar sebago*).

Ontario.—From Mr. R. P. Travers, of Illinois, were received specimens of nickel and copper from the Sudbury district, and nickel ore from the Chicago Nickel Company, Inez Mine, Travers, Algona district.

Vancouver Island.—From Mr. I. C. Russell, of the U. S. Geological Survey, were received 3 specimens of coal.

An exceedingly valuable collection of birds' nests and eggs was received from Mr. R. MacFarlane of the Hudson Bay Company.

CENTRAL AMERICA.

Costa Rica.—From the Museo Nacional de Costa, Rica San José, through Señor Anastasio Alfaro, was received a skin of *Antrostomus rufomaculatus*, representing a new species.

From Mr. George K. Cherrie, of the Museo Nacional de Costa Rica, San José, were received 73 specimens, representing 22 species of birds' skins from Costa Rica, forming a valuable addition to the collection; and, through the courtesy of Mr. Cherrie, from the museum at Costa Rica, were received in exchange 63 birds' skins representing 33 species, including types of 2 new species, 1 new genus, 2 species new to the collection, and plumages previously unrepresented. From Mr. Cherrie was also received an egg of *Vireo flavoviridis* from San José, new to the collection.

Guatemala.—From Lieut. Charles F. Pond, U. S. Navy, were received specimens of Grasshoppers (*Dictyophorus* sp.) and Fire-fly (*Photuris* sp.).

Honduras.—From Mr. Erich Wittkugel, of San Pedro Sula, were obtained by purchase 194 specimens of birds.

MEXICO.

Hidalgo.—Capt. John G. Bourke, U. S. Army, Fort Ringgold, Texas, deposited a sling used by the Hidalgo Indians.

Monterey.—From the Department of Agriculture, through Dr. C. Hart Merriam, were received 5 specimens of land shells collected by Mr. William Lloyd, of Monterey.

Queretaro.—From Mr. Miguel Piedra, of Lagos, Mexico, were received 4 opals.

Sonora.—Prof. B. W. Evermann, of Greencastle, Ind., transmitted a collection of fishes from the Bay of Guaymas.

Vera Cruz.—Prof. A. Dugès, of Guanajuato, transmitted a skin of Ferruginous Pygmy Owl (*Glaucidium phalaenoides*).

Miscellaneous.—Mr. William Brewster, of Cambridge, Mass., presented 3 specimens of the Lower California Wood Pewee (*Contopus richardsonii peninsulae* Brewst.). Prof. A. Dugès presented specimens of *Rhodinocichla schiastacea* from southern Mexico.

From Prof. C. V. Riley, Department of Agriculture, were received a series of 400 species of coleoptera and 130 species of hemiptera, collected by Prof. L. Bruner, of Lincoln, Nebraska.

Mr. E. Kirby Smith, jr., of Vera Cruz, transmitted a Lantern-fly (*Fulgora lanternaria*) found halfway across the Isthmus of Tehuantepec, in a dense thicket.

UNITED STATES.

Alabama.—From the U. S. Geological Survey, through Maj. J. W. Powell, director, were received specimens of cretaceous fossils.

Alaska.—Capt. W. C. Coulson, U. S. Revenue Marine Cutter *Rush*, presented the skin of an adult male Walrus (*Odobæus obesus*) from Walrus Island.

From Mr. I. C. Russell of the U. S. Geological Survey, were received 2 faulted pebbles from Pinnacle Pass, Mount St. Elias, 3 specimens of coal and a leather pouch containing a stone fish (used as a charm by medicine man), two stone mortars, adze, and stone implement.

Arizona.—From Capt. John G. Bourke, U. S. Army, were received ethnological objects and stone implements comprising grooved axes, hammers, rubbing-stones and other objects.

Mr. P. L. Jony of the Museum staff collected 89 alcoholic specimens of lizards in different sections of Arizona.

From the U. S. Geological Survey, through Maj. J. W. Powell, director, was received a specimen of agatized wood, from Chaleedony Park, collected by Mr. F. H. Knowlton of the Survey.

From the Geological Survey, were also received 40 specimens of kyanite in quartz, 80 specimens of dumortierite in quartz; 74 specimens of dumortierite in quartz from Clip, Yuma County, and 45 specimens of brochantite and malachite from the United Verde Mine, Jerome, collected by Dr. W. F. Hillebrand.

Through the courtesy of the Quartermaster's Department, U. S. Army, were received a number of fine specimens of onyx marble from a quarry near Prescott, collected by Mr. William O'Neill.

Arkansas.—From Mr. Charles F. Brown, of Hot Springs, was received a specimen of wavellite from Mount Ida.

California.—From the Department of Agriculture, through Prof. C. V. Riley, were received 54 specimens of coleoptera, collected by Mr. D. W. Coquillett, of Los Angeles, Cal., some of which are new to the collection, and also a collection of specimens of lepidoptera, collected by Mr. A. Koebele.

Hon. Delos Arnold, of Pasadena, presented specimens of pliocene and post-pliocene fossils.

Dr. George F. Becker, of the U. S. Geological Survey, transmitted 2 specimens of iridosmine.

From Mr. L. Belding, of Stockton, were received 4 skins of Belding's Spermophile.

Mr. F. W. Crosby, of Washington, D. C., transmitted a large series of ores and economic minerals.

Mrs. C. H. Dall presented samples of auriferous black sand from the coast of Mendocino County.

From Mr. Henry Hemphill, of San Diego, were received marine shells and 3 specimens of *Ostria Veatchii* Gab.

Mr. L. L. Frost, of Susanville, presented a stone mortar found on a neighboring ranch near Honey Lake, and a perforated stone found near the banks of the Susan River, also 3 arrow-heads and 2 round stones.

From Mr. C. R. Orentt, of San Diego, was received a collection of alcoholic specimens of reptiles, mammals, and a Black-headed Gull, alcoholic specimens of insects (mostly coleoptera), among which were 80 specimens of *Asida hirsuta*, collected in the Colorado Desert.

Prof. C. V. Riley, of the Department of Agriculture, transmitted to the Museum a series of lepidoptera, consisting of 17 specimens representing 17 species, and 200 specimens representing 20 species of coleoptera, most of which are rare and valuable to the collection. These specimens were obtained in the Colorado Desert by Mr. D. W. Coquillett.

Mrs. John A. Sherman, of Watertown, N. Y., presented a very beautifully prepared and abundant collection of sea-mosses and ferns, found by her on the Pacific coast, at Santa Barbara.

Dr. R. W. Shufeldt, U. S. Army, sent 3 alcoholic specimens of *Lagomys princeps* from the Sierra Nevadas.

Colorado.—From the U. S. Geological Survey, through Major J. W. Powell, director, were received specimens of cretaceous fossils; 10 specimens of cerussite from Polonia Mine, Rosita, collected by Mr. Whitman Cross; 2 specimens of gadolinite from Devil's Head Mountain, Douglas County, collected by Mr. L. G. Eakins, 1 specimen being the original material used by Mr. Eakins in identifying and describing the mineral from this locality, and 13 specimens of minerals from various localities in Colorado, which have been studied by Dr. Hillebrand, who collected the specimens.

Connecticut.—From Mr. C. H. Peek, of Newtown, were received 2 old brass buttons, and castings of 16 buttons of the kind in use in Revolutionary times.

Mr. John N. Sage, of Portland presented a fine specimen of fossil plant, *Dendrophyucus triassicus* Newby.

From the U. S. Geological Survey, through Major J. W. Powell, director, were deposited 3 specimens of minerals from Glastonbury, collected by Dr. W. F. Hillebrand.

Delaware.—Dr. Hilborn T. Cresson, Philadelphia, Pa., deposited a collection of archæological specimens collected by Mr. William Reilly and Mr. F. G. Smith at the site of the "Ancient Aboriginal Fish Weirs."

District of Columbia.—Hon. Edward Clark, the Architect of the Capitol, transmitted the original full size plaster model of the Statue of Liberty, by Thomas Crawford. This was used in making the mold in which was cast the bronze statue now surmounting the dome of the Capitol.

From Dr. Elliott Coues of Washington, D. C., was received a specimen of Tinamou (*Eudromias elegans*) for skeletons.

Gen. Benjamin F. Hawkes, Washington, D. C., presented an Eskimo snuff-bag made from the foot of an albatross.

Dr. Hugh M. Smith, of the U. S. Fish Commission, presented 8 birds' nests and 13 eggs.

Mrs. Mary I. Stroud, of Washington, D. C., deposited 14 daguerreotypes made with a camera imported from France by Prof. Walter R. Johnson, of Washington, D. C., soon after daguerreotyping was discovered.

The Treasury Department, Bureau of Printing and Engraving, through Hon. William M. Meredith, Chief of the Bureau, presented 264 unmounted India impressions of portraits, vignettes, and lathe work.

Florida.—From Mr. Henry Edwards, of New York City, were received alcoholic specimens of insects.

Mr. C. L. Hopkins, of Umatilla, presented a living Glass snake (*Ophisaurus ventralis*).

Lieut. J. F. Moser, U. S. Navy, commanding the Revenue Marine Steamer *A. D. Bache*, presented specimens of fishes comprising *Chilomycterus*, *Ostracion*, *Pristis*, *Centropomus*, *Muræna*, *Balistes*, *Platyglus*, *Hemirhombus*, *Urolophus*, *Centropristis*, *Monacanthus*, and *Echeneis*; alcoholic specimens of snakes, shells, and marine invertebrates.

From Dr. William L. Ralph, of Utica, N. Y., were received through Capt. Charles E. Bendire, U. S. Army, honorary curator of birds' eggs in the National Museum, the remains of an old Indian necklace, a stone implement from a mound-builders' tomb, and a handsome spear point; the skin of a Southern Hairy Woodpecker (*Dryobates villosus auduboni*) from San Mateo, and a collection of birds' eggs, mostly from Florida, including 3 species not before represented in the Museum collection.

From Hon. J. C. Sloeum, United States surveyor-general, Tallahassee, through Hon. John T. Noble, Secretary of the Interior, were received several old surveying instruments from the office of the surveyor-general at Tallahassee. Among them were included a transit, telescope tube, brass frame, wooden tripod and detached legs; solar compass, tripod and leveling head for the same; sextant (in case) and a standard chain.

From the U. S. Fish Commission, through Col. Marshall McDonald,

Commissioner, was received a small collection of brachyuran crustaceans obtained off the coast of Florida by the Fish Commission schooner *Grampus*.

Mr. Lester F. Ward, of the U. S. Geological Survey, presented 2 fine specimens of *Zamia integrifolia*.

Judge Webb, of Osprey, transmitted a collection of human fossil remains, found in sandstone near the shore of Sarasota Bay.

Idaho.—From the Department of Agriculture, through Dr. C. Hart Merriam, chief of the division of mammalogy, were deposited 31 specimens of reptiles and batrachians, and Dr. Merriam presented 3 species of fresh-water gastropods from Salmon River, and one species of land shell from Needle Peak.

Dr. W. P. Jenney, of the U. S. Geological Survey, transmitted a specimen of native lead, with minium and anglesite, from Mineral Hill district, near Hailey, Alturas County.

Illinois.—A very interesting collection of reptiles was received from Mr. Charles K. Worthen, of Warsaw.

Indiana.—Three species of corals, consisting of *Monticulipora filiosa* (2 specimens), *Streptelasma cornoculum* (2 specimens), and *Protarea vetusta*; three species of brachiopods, consisting of *Rhynchonella capax* (3 specimens), *Orthis biforata*, *Orthis retrorsa*, were received from Mr. F. Linsley, of Farmdale, Ohio. These specimens were found in the rocks of the Cincinnati Group (Hudson), Lower Silurian Age. Specimens of iron pyrites were also transmitted by Mr. Linsley.

From the U. S. Geological Survey, through Maj. Powell, director, was received a specimen of gyroceras (?) collected by Mr. C. D. Walcott, of the Survey.

From Mr. J. L. Cheyney, of Fort Dodge, Iowa (through Hon. C. C. Carpenter, M. C., and Hon. J. P. Dolliver, M. C., was received a silver watch which was carried by Thomas Cheyney, of Pennsylvania, during the Revolutionary war.

Hon. J. P. Dolliver, M. C., presented a fragment of the Winnebago County meteorite.

Mr. G. F. Kunz, of New York City, transmitted a specimen of meteorite from Winnebago County.

Seven specimens of corals representing 5 species from the Hamilton Group (Devonian) were presented by Mr. F. H. Luthe, of McGregor.

Kansas.—Mr. W. P. Jenney, of the U. S. Geological Survey, transmitted a specimen of native white sulphide of zinc from Moll Mine, Galena.

From Mr. George F. Kunz, of New York City, was received a specimen of meteorite from Kiowa County.

Kentucky.—Mr. George F. Kunz, of New York City, presented a specimen of meteorite from Carroll County.

Maine.—From the Cameron Silica Company, through Mr. C. E. Mitchell, superintendent, were received specimens of silica.

Maryland.—Mr. O. N. Bryan, of Marshall Hall, presented a collection of hammer stones, grooved axes, polished hatchet, paleolithic implements, rude notched implements, arrow and spear-points, pierced tablet, stone slab, with mortar like cavities, fragment of potstone vessel, and fragment of pottery.

From Master Samuel H. Hopkins was received a very beautiful specimen of American Sparrow Hawk (*Falco sparverius*).

Mr. Robert Ridgway, curator of birds in the National Museum, presented 44 birds' skins, representing 29 species.

Massachusetts.—Prof. W. O. Crosby, of Massachusetts Institute of Technology, Boston, transmitted in exchange three specimens of nickeliferous pyrrhotite from Draent.

From the Deerfoot Farm Company, through Mr. James Cheeseman, was received the original centrifugal separator, erected on the Deerfoot farm in 1879.

A collection consisting of 160 stone implements from Blackman's farm, Blackmans Point, at the mouth of Cut River, Marshfield, was received from Mr. George B. Frazar, of West Medford.

From the Granite Railway Company, Boston, through Mr. H. E. Sheldon, was received a piece of the old track of the Granite Railway.

The Massachusetts Society for the Promotion of Agriculture presented 240 colored plates illustrating the forest flora of the United States.

From Dr. C. A. Norton, of Washington, D. C., were received a warming-pan formerly belonging to the Franklin family, a photograph of a fire-place in the Franklin homestead, Nantucket, and a photograph of the Whittier fire-place, Haverhill.

A collection of fossils was presented by Mr. S. H. Scudder, of Cambridge, Mass.

Mr. W. W. Wheildon, Concord, presented a piece of the "Old North Bridge," over which the Massachusetts minute men and the British troops first opened fire upon each other.

Minnesota.—From Dr. Edgar A. Mearns, U. S. Army, was received a Western Evening Grosbeak (*Coccothraustes vespertinus montanus*), first plumage, and new to the collection.

Mississippi.—From the U. S. Geological Survey, through Maj. J. W. Powell, director, were received specimens of cretaceous fossils.

Missouri.—Dr. J. H. Britts, of Clinton, presented 150 specimens representing about 35 species of carboniferous fossil plants from the vicinity of Clinton.

Montana.—From Mr. J. B. Koch, of Bozeman, were received 70 rude implements, consisting of knives, arrow points, flakes, and a fragment of potstone vessel.

Dr. Clinton L. Merriam, of Locust Grove, N. Y., deposited two pairs of interlocked elk antlers.

Capt. O. M. Smith, U. S. Army, Fort Keogh, transmitted a Springfield bullet partially pierced by a nail at target range.

Nevada.—Mr. L. L. Frost, of Susanville, presented a flint perforator from Smoke Creek.

New Jersey.—From Mr. Theo. M. Ely, general superintendent of the Motive Power, Pennsylvania Railroad, Altoona, Pa., was received a car-wheel of the same class of wheels in use under the first locomotive and cars run on the New Jersey Railroad, and similar to those used under the cars when they were drawn by horses prior to the use of locomotives.

New Mexico.—From Capt. John G. Bourke, U. S. Army, were received ethnological objects and stone implements.

From the Department of Agriculture, through Dr. C. Hart Merriam, were received the jaw and radius of a bear from a cave in Grant County.

Dr. W. Matthews, U. S. Army, Fort Wingate, sent a pair of wooden tongs used by the Navajo women for picking cactus fruit.

From Mr. M. Metcalfe, of Silver City, was received a fork-tailed lizard (*Cnemidophorus gularis*).

From the U. S. Geological Survey, through Major J. W. Powell, director, was received a specimen of smoky quartz, collected by Mr. F. H. Knowlton in Santa Fe.

A large series of ores and economic minerals were collected and presented by Mr. F. W. Crosby, of Washington, D. C.

New York.—From Mr. Moses Eames, of Watertown, through Mr. N. F. Blount, of Washington, D. C., was deposited an old plow, which was awarded a premium by the Jefferson County Fair in 1820 for the best plow manufactured. The plow was manufactured by Col. William Lord in 1820.

Hon. Roswell P. Flower, M. C., presented an ancient iron ax, an English penny of date 1734, brass button, brass arrow-points, and stone tablet found near the ruins of Fort George.

From Mrs. F. M. Hartwell, of Washington, D. C., was received a foot-stove belonging to David Randall and used in the "Old Red Meeting House" in Dutchess County in 1788.

Mr. J. Scott Hartley, of New York City, presented life-size busts of Judge Noah Davis, Edwin Booth, Lawrence Barrett, and John Gilbert.

Mrs. Nellie Long Maynard, through Mr. George W. Maynard, of New York City, presented breech-loading guns, guns fitted with the Maynard system of priming—inventions of Dr. George Maynard—parts of Maynard rifle, wooden models of parts of guns, chargers, breech-block, hammer, and priming case, loading device, primed cartridges, cartridges, and priming strips (tapes).

From the New York Central and Hudson River Railroad Company, through Mr. William Buchanan, superintendent, was received one of the wheels of the locomotive "De Witt Clinton."

A specimen of *Orthoceras* from the Upper Devonian formation of New York was received from Mr. Oscar Potter, of Scott, N. Y.

Dr. William L. Ralph, of Utica, presented a nest and 3 eggs of *Sporo-*

phila moreletti sharpi; 8 eggs of *Parus atricristatus*, new to the collection; 2 eggs of *Chordeiles texensis*; 4 eggs of *Tyrannus melancholicus couchii*, new to the collection, and 2 eggs of *Columba flavirostris*.

The Syracuse Plow Company, of Syracuse, N. Y., presented a model of a steel plow.

The U. S. Geological Survey, through Mr. C. D. Walcott, presented 2 slabs of slate showing bedding, cleavage, and faulting.

Mr. Stephen Vail, of New York City, deposited a paper ribbon containing a record of the first Presidential election reported by electric telegraph, November 5, 1844.

North Carolina.—A collection containing 500 specimens of annelids from Beaufort and Virginia, was received from Dr. E. A. Andrews, of Baltimore, Md.

From Messrs. H. H. and C. S. Brimley, of Raleigh, were received 24 specimens representing 11 species of batrachians, among which is a fine series of what is believed to be Holbrook's *Salamander haldemanni*, a form apparently lost sight of since its original description.

From Mr. Frank Burns, of the Smithsonian Institution, was received a specimen of matting manufactured out of the leaf fiber of the Long leaved Pine (*Pinus palustris*), obtained from the manufactory at Cronly, near Wilmington.

Archæological specimens from the base of Roan Mountain were collected and transmitted by Mr. P. L. Jouy, of the National Museum.

Ohio.—Mr. Warren K. Moorehead, of Xenia, deposited the Simonton collection of aboriginal relics from Warren County.

From Prof. Edward Orton, of Columbus, were received 7 specimens of fossil plants from the Devonian and Carboniferous formation of Ohio.

Prof. F. W. Putnam, of Peabody Museum, Cambridge, Mass., transmitted an ancient iron lamp found in the remains of a fruit-drying house on the top of a mound in Adams County.

Oregon.—Dr. A. G. Prill, of Sweet Home, presented 11 eggs (one set) of the Ring-necked Pheasant (*Phasianus torquatus*), an introduced species in the United States, new to the collection.

Pennsylvania.—Mr. Charles W. Cottom, of Dunbar, presented a piece of charcoal taken out of the ill-fated Hill Farm mine, some 1,500 feet from the mouth of the pit.

From Mr. S. M. Fletcher, of Lima, Ohio, through Hon. S. S. Yoder, was received a specimen of oil sandrock from the Union Oil Company well No. 9, Barse Track, McKean County. This specimen was found at the depth of 1,730 feet.

A silver medal of Franklin Institute, Philadelphia, presented in 1854 to Mr. Joseph Francis, of Minneapolis, was transmitted by him to the Museum.

From Messrs. Lindsay and Early was received as a loan the cylinder of the locomotive "Stourbridge Lion."

Two polished slabs of marble were received from Messrs. Schweyer and Liess, of King of Prussia, Montgomery County.

Mr. James Todd, of Pittsburg, presented a silver watch with fob-chain, seal, and pendant, supposed to have been taken from a British soldier at the battle of Lexington, 1775, by Lieut. Todd, of the Continental army.

From the U. S. Geological Survey, through Maj. J. W. Powell, director, were received samples of garnet, 4 specimens of garnet in muscovite, and 2 pieces of chalcedony, collected by Mr. E. A. Schneider in Delaware County.

South Carolina.—From Mr. James E. Benedict, of the National Museum, was received a collection of birds' skins, containing, among many other valuable and interesting species, one entirely new to the collection, *Cistothorus marianæ* Scott.

Mr. J. L. Black, managing director of the Magnetic Iron and Steel Ore Company, Blacksburgh, transmitted specimens of ore from the mines of the company.

From Mr. E. E. Jackson, of Columbus, were received archaeological objects, consisting of shallow stone mortars, rubbing-stone, grooved axes, polished hatchet, leaf-shaped implement, arrow and spear-points, stone pendant with lines and dots, fragments of pottery, and fragments of potstone vessels.

Mr. W. C. Kendall, of the U. S. Fish Commission, transmitted 30 specimens of birds' skins, representing 27 species.

South Dakota.—Dr. Z. T. Daniel, Cheyenne River Agency, presented stone implements, teeth, and pottery found in the remains of Indian houses. The houses were formerly inhabited by the Rees tribe (Arikarees) of the Pawnee family. The specimens were collected at the suggestion of Gen. T. J. Morgan, Indian Commissioner. In addition, Dr. Daniel contributed the bones of a Sioux Indian found on the site of an ancient burial-tree on the Missouri River near the agency, and also buffalo horns.

From Mr. Frank D. Lewis, special agent, Indian Department, were received through Mr. F. J. Heiberger, of Washington, D. C., two "ghost shirts" from the site of the "Wounded Knee" fight.

Tennessee.—Mr. Tertsh Lander, of Williamston, presented specimens of coal plants from Tracy City.

A large series of ores and economic minerals from Texas were collected and presented to the Museum by Mr. F. W. Crosby, of Washington, D. C.

From the U. S. Geological Survey, through Maj. J. W. Powell, director, were received specimens of cretaceous fossils.

Utah.—Mr. Titus Ulke, of Hill City, S. Dak., presented a specimen of fibrous meerschaum from Little Cottonwood.

Virginia.—Dr. E. A. Andrews, of Baltimore, Md., presented a collection of annelids containing 500 specimens from Willoughby Sand Spit, and Beanfort, N. C.

From Mr. H. B. Battle, director of the North Carolina Agricultural

Experiment Station, Raleigh, was received a portion of the Henry County meteorite.

From the Randolph-Macon College, through Mr. Richard Irby, secretary and treasurer, was received a medal commemorating the incorporation of the college, February 3, 1830.

Mr. Henry Hemphill, of San Diego, Cal., presented tertiary fossils from Lake Whatcom.

Wisconsin.—From Dr. W. J. Hoffman, of the Bureau of Ethnology, were received a model of Menomonee medicine-man's grave with symbols; crayon sketch of the grave of Osbkosh, and of the great lodges of the Menomonee tribe, where funeral services are held over medicine-men on the anniversary of their death.

Wyoming.—From the Department of Agriculture, through Dr. C. Hart Merriam, were received specimens of fossil turtles and mammals from Fort Bridger.

From the U. S. Geological Survey, through Major J. W. Powell, director, were received 17 specimens of chalcedony, collected at Fossil Point by Prof. Lester F. Ward.

Miscellaneous.—From the American Historical Society were received, through Mr. A. Howard Clark, assistant secretary of the society, manuscripts, drawings, letters, etc., comprising the "Vail papers" relative to the invention and early application of the telegraph.

Dr. John Bartlett, of Chicago, Ill., transmitted a model of a Burmese canoe.

Mr. William J. Boyd, of Brooklyn, N. Y., presented a model of the vessel *Half Moon*.

Miss Mary Henry, of Washington, D. C., deposited the electro magnetic engine for producing reciprocating motion by magnetic attraction and repulsion, invented and constructed by Prof. Joseph Henry in 1851.

The gem collection of the late Dr. Joseph Leidy, containing 400 cut stones, was obtained by purchase from the heirs of Dr. Leidy's estate.

From Mr. Frederick S. Perkins, of Madison, Wis., by special appropriation of Congress, was purchased his large collection of prehistoric copper and galena objects, obtained principally from Wisconsin and Ohio.

From Mr. Frederick W. Porter, of Chicago, Ill., was received a collection of old State-bank notes from 1817 to 1860.

Prof. C. V. Riley, of the Department of Agriculture, transmitted a series of 400 species of coleoptera and 130 species of hemiptera, collected in the United States by Prof. L. Bruner, of Lincoln, Nebr.

The Hinds Ketcham Company, of Brooklyn, N. Y., transmitted a collection of incandescent lamps, switches, and other apparatus used in 1881 in connection with one of the earliest electric-light plants in America.

From the Singer Manufacturing Company, Hartford, Conn., were received 11 sewing-machines.

ISLANDS IN THE ATLANTIC OCEAN.

Bahama Islands.—Mr. Edward D'Invilliers, of Philadelphia, Pa., presented specimens of phosphates from the island of Navassa.

A specimen of Ani (*Crotophaga ani*) was received from Dr. T. F. R. Dufour, of Washington, D. C. This specimen was obtained from the island of Navassa.

Mr. I. Greeger, of Jacksonville, Fla., presented a remarkably fine series of *Tritonium femorale*.

WEST INDIES.

Mr. C. B. Cory, of Boston, Mass., presented 40 birds' skins, representing 25 species.

Lady Edith Blake, King's House, Jamaica, presented drawings of emblems of the Red Indian mythology and a water-color plate of Beothuck Indian ornaments.

From the Botanic Garden, Trinidad, was received a specimen of a newly discovered deposit of foraminiferous earth ("Philippine deposit"), from Naparima district, Trinidad.

SOUTH AMERICA.

ARGENTINE REPUBLIC.

From Mr. Henry Edwards, of New York City, were received alcoholic specimens of insects.

A very complete collection of woods of the Argentine Republic was presented by the Museo de Productos Argentinos, through Mr. John F. Thompson.

BRAZIL.

Mr. C. F. Brown, of Hot Springs, Ark., sent a specimen of yellow topaz.

Prof. Orville A. Derby, of the national museum of Brazil, through the courtesy of Prof. J. M. Clarke, University of the State of New York, New York State Museum, Albany, N. Y., transmitted trilobites from the paleozoic system of Brazil.

Hon. J. O. Kerby, United States consul at Para, presented 2 birds' skins from Brazil, and a few feathers of the Eigretei, a rich and rare bird of the heron species found on the island of Marajo, Amazon River; 11 specimens of South American Golden Tortoise-beetle (*Desmognota variolosa* Webb), and 3 pieces of the bark of the tree used by the Amazon Indians for paper.

Capt. A. V. Reed, U. S. Navy, presented a dragon fly (*Cordulegaster*) and a turtle.

Mr. C. W. Richmond, of the Department of Agriculture, sent in exchange two birds, *Pteroglossus castanotis* and *Colaptes campestris*, from Chapada, Province of Maranhão.

Dr. H. Von Ihering, of Rio Grande do Sul, sent 8 species of recent shells and 16 species of fossils; also a collection of fresh-water shells from the southern part of Brazil.

CHILE.

Messrs. Ward and Howell, of Rochester, N. Y., presented a fragment of a meteorite from Llano del Inca.

ECUADOR.

From Dr. Hugh M. Smith, of the U. S. Fish Commission, were received skins of the Golden-headed Manakin (*Pipra aurocapilla*) and Blue-crowned Manakin (*Pipra coronata*).

FRENCH GUIANA.

From Mr. Charles Bullman, of Plainfield, N. J., were received specimens of phosphates of alumina and iron, from the Island of Grand Cannetable.

PATAGONIA.

From the Royal Museum of Natural History, Berlin, Germany, was received, in exchange, a collection of echinoderms.

PERU.

Mr. F. T. Redwood, of Baltimore, Md., sent, in exchange, a wooden image.

From Mrs. J. H. Baxter, of Washington, D. C., were received on deposit 37 specimens of ancient Peruvian pottery collected by Mr. William Tryon, and presented by him to Surgeon-General Baxter. This collection is known as the "Tryon collection."

UNITED STATES OF COLOMBIA.

Mr. Charles Bullman, of Plainfield, N. J., presented a piece of bark-cloth called "damaqua," made by the Indians of Choco; a little paint-pot used by the Choco Indians to hold the red paint made from anatto seeds; a piece of lignite from gold and platinum alluviums, Condoto River, and specimens of gold and platinum from the same locality.

From Hon. Thomas Herran, of Hamburg, Germany, was obtained by purchase 9 golden ornaments of ancient Colombian workmanship, weighing 133 grams, taken from graves in the province of Antioquia. Mr. Herran also presented 2 pieces of ancient Indian pottery from a grave in the same locality.

VENEZUELA.

From Mr. R. M. Bartleman, of the United States legation, Carácas, was received a fine series of *Argonauta argo* and other marine shells; also a collection of insects.

A collection of fishes made by the steamer *Albatross* from the Galapagos Islands, was received from the U. S. Geological Survey, through Major J. W. Powell, director.

ASIA.

CHINA.

Canton.—Mr. P. L. Jouy, of the U. S. National Museum, deposited 2 double cutlasses.

Shanghai.—From the Department of State were received samples of ramie in various stages of manufacture, and a report regarding this industry by the United States Consul-general at Shanghai.

Wenchow.—Dr. D. J. Macgowen, through Hon. J. D. Kennedy, Consul-general, Shanghai, presented a sturgeon in alcohol, a pair of stockings, and two wooden models.

Mr. P. L. Jouy deposited 13 objects of mother-of-pearl, and 4 pieces of jade.

A collection of Chinese musical instruments was obtained for the Museum by Dr. Julius Neumann.

Mr. W. W. Rockhill, of Washington, D. C., deposited a collection of Chinese enamels, lacquers, and bronzes, Chinese swords, daggers, belt-knives, and chopsticks. Mr. Rockhill also presented a tobacco-pouch.

KOREA.

Mr. P. L. Jouy, of the U. S. National Museum, presented 3 stone implements, and a package of Korean tobacco, and deposited a collection of Korean religious objects.

Mr. W. W. Rockhill, of Washington, D. C., deposited a pair of shoes worn by Korean children, and a quiver filled with arrows.

INDIA.

Burma.—Through the courtesy of Mr. Henry Balfour, of Oxford, England, a bamboo blowpipe from Burma, was received in exchange from the Oxford Museum, Oxford, England.

Mr. Edward Lovett, of Croydon, England, sent in exchange a brass lota.

Calcutta.—From the Royal Botanic Garden, through Dr. G. King, superintendent, was obtained by exchange, a collection of dried plants.

Madras.—Bishop John P. Newman, presented a mosaic dish, inlaid with variegated stones.

From the Royal Botanical Gardens, Kew, England, through Dr. W. T.

Thiselton-Dyer, director, was received in exchange, a collection of Indian fabrics.

From the Wesleyan University, Middletown, Conn., through Prof. William North Rice, was received a group of Indian idols.

JAPAN.

From Lieut. T. Dix Bolles, U. S., Navy, was received a fire-bowl.

W. Eagle Clarke, esq., of the Edinburgh Museum of Science and Art, Edinburgh, Scotland, sent in exchange a collection of birds' skins.

From Mr. Harry V. Henson, of Yokohama, were obtained by purchase 380 birds' skins from the island of Yezo.

Mr. Romyu Hitchcock presented Japanese alphabetical playing cards.

Mr. P. L. Jouy presented 2 shampooer's whistles and 2 clam-darts, and deposited a Japanese sword.

From Mr. H. Loomis, of Yokohama, were received cocoons of the ichneumon fly (*Apanteles sp.*), and 2 specimens of the work of the insect.

Mr. F. T. Redwood, of Baltimore, Md., sent in exchange, a pair of Japanese swords and a hari-kiri dirk.

Mr. W. W. Rockhill, of Washington, D. C., presented Japanese swords, daggers, belt knives, and chopsticks.

From Mr. T. Tokuno, chief of the Insetsu Kioku, Tokyo, were received 6 sheets of color-prints from paintings by Japanese artists, and 5 illustrated Japanese books, consisting of nineteen volumes.

SIAM.

From Hon. S. H. Boyd, United States Consul-general, Bangkok, were received gambling cards and a set of dice.

Rev. H. S. Gorman, England, presented 30 specimens, representing 19 species of named coleoptera.

From the Royal Museum of Natural History, Berlin, Germany, was received a collection of echinoderms.

ASIATIC RUSSIA.

Bagdad.—From Rev. John P. Peters, of Philadelphia, Pa., were received a kufa, plow, yoke, spade, two guns, handle of pestle, and 2 paddles for kufa, collected by Dr. Peters for the National Museum.

Beirut.—From Mr. Stewart Culin, of Philadelphia, Pa., were received 2 packs of playing cards.

Mesopotamia.—Rev. John P. Peters, of Philadelphia, collected for the National Museum a number of ethnological objects illustrating the life of the Arabs of Mesopotamia.

ASIA MINOR.

From Col. S. F. Tappan, Washington, D. C., was received a shirt made of chain armor, captured by Hon. H. M. Stanley from brigands.

ISLANDS IN THE INDIAN OCEAN.

Ceylon.—From Mr. A. P. Gordon-Cumming, of Washington, D. C., was received a feather head-dress made by the Cinghalese.

From Prof. Henry A. Ward, of New York City, was received in exchange a specimen of Kelaart's Monkey (*Semnopithecus kelaartii*).

Mauritius.—From Mr. Edward S. Schmid, of Washington, D. C., was received a Mountain dove (*Geopelia striata*).

From the Royal Museum of Natural History, Berlin, Germany, was received in exchange a collection of echinoderms. This collection was also obtained in part from the Kerguelen and Philippine Islands.

EUROPE.

AUSTRIA-HUNGARY.

From Mr. H. J. Johnston-Lavis, of Naples, Italy, were received in exchange specimens of minerals from Tyrol.

DENMARK.

From Dr. C. A. Norton, of Washington, D. C., was received a pair of fire-tongs brought to the United States in 1792, which were originally used for transporting coals of fire from one house to another.

FRANCE.

From Mr. Henry Balfour, of Oxford, England, were received in exchange 2 iron lamps used by bakers for lighting ovens and a spoon made of a pecten shell, and commonly used by the fishing people on the southern coast of Brittany.

From Mr. Charles Ginçriez, director of the museum at Châlon-sur-Saône, was received in exchange through Mr. John Durand, of Paris, an impression from a heliograph "Portrait of Cardinal Amboise," from an engraving by Briot, made by Mr. Joseph Nicéphore Niepce in 1824.

Mr. Henry Balfour, of Oxford, England, transmitted in exchange a model of a shell lamp and a French crucible, of brass, from Normandy.

Prince Roland Bonaparte, of Paris, presented photographs of Somalis and of Hottentots.

The Department of State, through Hon. William Wharton, assistant secretary, transmitted 2 medals awarded to the Government of the United States for its exhibits at the late Paris International Exhibition, and 2 diplomas awarded to the United States from the same source.

Mr. George H. Draper, of Paris, France, through Mr. D. S. Lawson and Hon. J. W. Candler, presented an account-book of the Royal Treasurer under Louis xv, signed by Louis xvi, March 28, 1780.

From Mr. Joseph Francis, of Minneapolis, was received a silver medal presented to him by the Société Générale des Naufrages, in recognition of his services in connection with life-saving appliances.

Dr. Hilborn T. Cresson, of Philadelphia, Pa., deposited 5 flint objects from the cavern of Le Moustier.

GERMANY.

From Mr. J. B. Kevinski, of Lancaster, Pa., was received a clavichord brought to the United States about 1741.

A collection of echinoderms was received from the Royal Museum of Natural History, Berlin.

GREAT BRITAIN.

England.—From the Guildhall Library Committee, London, through Mr. Charles Welch, were received 6 copies of bronze medals issued by the corporation of the city of London and representing the visit of Queen Victoria to Guildhall, 1837; passing of the Reform Bill, 1832; opening of the London Bridge (large); opening of the London Bridge (small); thanksgiving at St. Paul's for the recovery of the Prince of Wales, and the opening of the City of London School.

From Mr. Edward Lovett, of Croydon, England, were obtained by exchange a knife found while excavations were being made at Temple Bar, and 11 pieces of pottery from Old London.

From the Royal Geographical Society, through Mr. H. W. Bates, assistant secretary, was received a bronze medal commemorating the Staunley expedition for the relief of Emin Pasha.

From Mr. Thomas Rogers, of Manchester, were received a number of specimens of *Planorbis dilatatus*.

From Mr. W. Eagle Clarke, Edinburgh Museum of Science and Art, Edinburgh, Scotland, were received in exchange birds' skins.

Mr. Thomas Ruddy, of Cowen, Wales, transmitted 232 specimens of Bala fossils.

Scotland.—From Mr. Henry Balfour, of Oxford, England, was received a model of a shell lamp found in the vicinity of the Orkney and Shelter islands.

From the U. S. Geological Survey, through Major J. W. Powell, director, were received 4 specimens of Devonian fish remains, collected by Mr. C. D. Walcott, of the Survey.

GREECE.

From Mr. R. Forrer were obtained by purchase a collection of Roman pottery and specimens of Coptic cloths.

From Mr. H. J. Johnston-Lavis, of Naples, Italy, were received specimens of minerals.

ITALY.

Catania.—The U. S. Department of State transmitted seven specimens of celestite with sulphur, collected by the United States Consul at Catania.

Florence.—From Supervising Surgeon-General John B. Hamilton, U. S. Marine Hospital service, was received a piece of wood, supposed

to be a piece of lignite, excavated from a mountain near Florence, and used in many parts of Italy for fuel.

Isle of Elba.—From Mr. J. G. McGuire was received a specimen of pyrite.

Leghorn.—From Hon. William T. Rice, United States Consul, were obtained 6 rare historical medals consisting of the following: Bronze medal, 1790, Rhode Island fight; silver medal, 1780, armed neutrality of Russia, Denmark, Sweden, and Holland during the war of independence of America, with the arms of the four States “Ichova wrecker der verbonden”; duplicate of the above medal; silver medal of 1784 “Médaille offerte par la Société.” “Voorveÿheid in ÿver” to the State of Friesland, Holland, (Friesland arms) on the occasion of John Adams’s reception as an ambassador of the United States; a silver medal representing the independence of the United States recognized by Holland “Libera soror” April 19, 1782, and a silver medal treaty of commerce between the United States and Holland, October 7, 1782.

Monte Gimmelaro.—From Mr. J. P. Iddings, of the U. S. Geological Survey, was received a specimen of basalt with inclusion of vitrified sandstone.

Sicily.—Mr. Joseph Francis, of Minneapolis, Minn., transmitted a gold medal presented to him by Ferdinand II, in recognition of his services in connection with life-saving appliances.

From the U. S. Geological Survey, through Maj. J. W. Powell, director, was received a crystal from Mineo.

Mr. H. J. Johnston-Lavis, of Naples, Italy, transmitted, in exchange, specimens of minerals and a series of eruptive rocks.

Mr. Edward P. Mason, of Boston, Mass., presented an Italian stringed “Salterio” about 120 years old, with an ornamental outer case, and several sheets of manuscript music by Pasquale Anfossi, a celebrated and successful dramatic composer in the years 1733–1795.

Mr. Thomas Wilson, of the U. S. National Museum, deposited a bronze sword, 20½ inches long.

NORWAY.

Arendal.—From Dr. W. F. Hillebrand, of the U. S. Geological Survey, was received a specimen of ytrognummite.

Christiania.—From Dr. Robert Collett, director of the Zoölogical Museum, was received, in exchange, the skeleton of a porpoise.

Tromhjem.—Dr. I. Hagen transmitted, in exchange, a collection of Norwegian mosses.

RUSSIA.

From Mr. Joseph Francis, of Minneapolis, Minn., was received a medal representing the insignia of the Order of Sr. Stanislaus, conferred upon him by the Emperor of Russia, in recognition of his services in connection with life-saving appliances.

From Mr. Theo. Holm, of the U. S. National Museum, was received a specimen of grogrolite from the Kara Sea, north of Siberia, collected by the Danish North Pole Expedition of 1882 and 1883.

From Mr. A. Lösch, of St. Petersburg, through Dr. E. A. Schneider of the U. S. Geological Survey, were received 2 specimens of xanthrophyllite (walnewite) and a specimen of ripidolite from Nikolaje Maximilianowsk Mine, near Slatoust.

Dr. E. A. Norton, of the U. S. Geological Survey, presented a specimen of leuchtenbergite from Schischimsk, near Slatoust, southern Ural.

From the Royal Zoölogical Museum of Copenhagen, Denmark, through Prof. Dr. Chr. Lütken, were received, in exchange, 27 specimens (representing 11 species) of marine shells; 4 species of fishes, including *Liparis fabricii*, *Pycodes lütkeni*, *Icelus hamatus* and *Aspidophoroides olrikii*; a collection of crustaceans, echinoderms, bryozoans, worms, sponges, hydroids, and other specimens collected by the steamer *Dymphna* during an exploring expedition in 1882-'83 north of Russia, and the Kara Sea, Nova Zembla, and the Arctic regions.

Mrs. Mary I. Stroud, of Washington, D. C., deposited a collection of Russian minerals, presented in 1845 by the Russian Government to Prof. Walter R. Johnson, of Washington, D. C.

SPAIN.

Mr. S. P. Langley, secretary of the Smithsonian Institution, presented a pack of Spanish "Monte" cards collected by him in Spain, and 2 reed pipes of Moorish character.

Mr. W. W. Rockhill, of Washington, D. C., presented Moorish daggers and a short sword; also a Catalonian knife.

From Col. Seely, of the United States Patent Office, was obtained a collection of photographs representing ethnological objects. Col. Seely also presented a set of bronze weights and a brass clock.

SWEDEN.

From the Geological Survey of Sweden, Stockholm, were received in exchange 51 species of Cambrian fossils.

SWITZERLAND.

From Mr. Edward Lovett, of Croydon, England, were received in exchange a model of a Swiss fire-drill and a bronze fish-hook from the Swiss lake-dwellings.

TURKEY.

From Hon. O. S. Straus, of Constantinople, was received a cast of the Jerusalem stele, the original of which is in the Imperial Museum at Constantinople.

Objects of interest have been received from various parts of Europe, the exact localities from which some of them were obtained not being stated. Among them are the following:

Specimens of rocks sent in exchange by Prof. William H. Hobbs, of Madison, Wis.

From Mr. J. P. Iddings, of the U. S. Geological Survey, was received a volcanic bomb from the Island of Lipari, Mediterranean Sea.

Fourteen species of European *Caribida*, received in exchange from Mr. Paul Noel, of Ronen, France.

Sixty-two species of lepidoptera, received from the Department of Agriculture through Prof. C. V. Riley.

A collection of echinoderms, received in exchange from the Royal Museum of Natural History, Berlin, Germany.

Specimens of rocks, received in exchange from Mr. B. Sturtz, of Bonn, Prussia.

Alcoholic specimens of deep-sea fishes and the skin of a shark, transmitted by the Museum of Natural History, Paris, France, through Mr. Léon Vaillant, collected in the Atlantic Ocean and the Mediterranean Sea by the *Travailleur* and *Talisman* expeditions and by the Commission to Cape Horn.

OCEANICA.

AUSTRALASIA.

AUSTRALIA.

New South Wales.—From Mr. Walter Koehler, of Broken Hill, was received a very fine collection of minerals and rocks from the Broken Hill Mines.

From Mr. Titus Ulke, of Washington, D. C., was received a specimen of phosgenite from Broken Hill.

Baron Ferd von Mueller, of the Royal Botanical Gardens, Australia, presented fossil plants.

NEW CALEDONIA.

Mr. W. E. Traill, of Fort St. James, Stuart's Lake, British Columbia, presented alcoholic specimens of salmon.

NEW GUINEA.

From the Museum of Fine Arts, Boston, Mass. (through Gen. Charles G. Loring, director), was received a spear.

From the Royal Botanical Gardens of Kew, England, was received in exchange a collection of textile fabrics, specimens of materia medica, a mat, and other objects.

VICTORIA.

From Baron Ferd von Müeller, of the Royal Botanical Gardens, Australia, were received fossil fruits, consisting of *Spondylostrobos Smythii*, *Pleioclinis Sheperdi*, and *Conotheca turgida*. These specimens were transmitted to the National Museum through the courtesy of Mr. David White, of the U. S. Geological Survey.

NEW ZEALAND.

From Mr. Henry Edwards, of New York City, were received sponges and other marine specimens; alcoholic specimens of Dormouse Phalanger (*Dromicia concinna*) and alcoholic specimens of reptiles from the western part of Australia.

From the British Museum, London, England, through Dr. A. Günther, was received a collection of marine objects.

Mrs. C. C. Cox, of Washington, D. C., presented 3 eggs of the Australian emu.

POLYNESIA.

FIJI ISLANDS.

From Mr. Edward Lovett, of Croydon, England, were received in exchange a wooden dish, mallet, and tapa cloth.

Prof. I. C. White, West Virginia University, Morgantown, W. Va., transmitted in exchange a carved wooden vessel inlaid with shell and bone, and known as "priest bowls," collected by Lieut. W. I. Moore, U. S. Navy.

HAWAIIAN ISLANDS.

From Mr. A. F. Knudsen, of Cambridge, Mass., were received alcoholic specimens of *Mus musculus* and *Mus musculus (melanistic)*.

Dr. H. C. Bolton, of New York City, presented 3 photographs of Hawaiian surf-boards and surf-board riding.

SAMOAN ISLANDS.

From Lieut. T. Dix Bolles, U. S. Navy, was received a collection of ethnological objects, shells, sea-urchins, corals, echini, sponge, and a canoe with fittings. He also presented a basket and a gold mat.

ISLANDS IN THE PACIFIC OCEAN.

Marshall Islands.—From Lieut. T. Dix Bolles, U. S. Navy, was received a tapa cloth.

Palao Islands.—From Capt. Frank Curling, in command of the American ship *Joseph D. Spinney* (through Capt. S. A. Day, U. S. Army), was received a dugout, found adrift 210 miles off the Palao Islands.

NUMBER OF ACCESSIONS ANNUALLY SINCE 1881.

A tabulated statement showing the number of accessions to the Museum each year, beginning with 1881 (the first year of the occupancy of the new building), is here given.

Year.	Accession numbers (inclusive).	No. of accessions during the year.
1881.....	9890-11000	1, 111
1882.....	11001-12500	1, 500
1883.....	12501-13900	1, 400
1884.....	13901-15550	1, 650
1885 (January to June).....	15551-16208	658
1885-'86.....	16209-17704	1, 496
1886-'87.....	17705-19350	1, 646
1887-'88.....	19351-20831	1, 481
1888-'89.....	20832-22178	1, 347
1889-'90.....	22179-23340	1, 162
1890-'91.....	23341-24527	1, 186
Total number of accessions from 1881 to June 30, 1891.....		14, 637

The first entry in the Accession Book bears the date of January 1, 1859, although considerable material had been received before that time. From the above figures it will therefore be seen that the accessions during the past ten years largely exceed the total number received during the previous twenty-two years, or the period between 1859 and 1881.

I.—COÖPERATION OF THE DEPARTMENTS AND BUREAUS OF THE GOVERNMENT DURING THE YEAR ENDING JUNE 30, 1891.

The National Museum, as in past years, has been the recipient of many valuable and interesting contributions from the different bureaus of the Government. The U. S. Geological Survey and Fish Commission have as usual been very active in their friendly coöperation. The Department of Agriculture has contributed large and interesting collections, particularly from North America.

The officers of the Army and Navy have been instrumental in adding to the collections of the different departments and sections of the Museum, and the Quartermaster's Department has been efficient in its services, as has always been its custom. The Department of State has perhaps been more active in its contributions, particularly through its ministers and consuls, than in former years. In response to a letter from Secretary Langley, addressed to State Department officials in various foreign countries, and bearing the indorsment of that Department, some valuable accessions have been received and others promised. A report upon these contributions will be made in due course.

DEPARTMENT OF STATE.

From the Department, through Hon. William F. Wharton, assistant secretary, were received 2 diplomas awarded to the United States Government at the late Paris International Exhibition; a medal awarded to the Smithsonian Institution from the same source; and 2 medals awarded to the United States for its exhibits at the same exhibition.

Through Mr. Sevellon A. Brown, chief clerk, were received 2 large bricks, which appear to represent cuneiform or other inscriptions; samples of Chinese ramie, in various stages of manufacture, and a report upon this industry written by the Consul-general of the United States at Shanghai.

From Mr. William E. Curtis, executive officer of the International American Conference, was received an album of portraits of the officers and members of the conference held at Washington in 1889-'90, and a photograph of Carib relics from St. Vincent.

From Mr. R. M. Bartleman, of the United States Legation at Carácas, Venezuela, were received specimens of insects; shells and salt from Cumana, alcoholic specimen of snake from Carácas, 2 gourds, and pieces of pottery; specimens of Cicadae used for medicinal purposes, and, through Prof. Otis T. Mason, of the National Museum, Mr. Bartleman transmitted a fine series of *Argonauta argo* and other marine shells.

From Hon. S. H. Boyd, United States Consul-general at Bangkok, Siam, were received playing-cards used in Siam for gambling, and a set of dice.

Hon. J. O. Kerby, United States consul at Para, Brazil, presented, through Dr. Frank Baker, acting manager of the National Zoölogical Park, 2 specimens of birds' skins from Brazil, and a few feathers of the Eigretei, a rich and rare bird of the Heron species from the Island of Marajo, Amazon River; 11 specimens of South American Golden Tortoise-beetle (*Desmonota variolosa* Web.), and 3 pieces of the bark of the tree which the Amazon Indians use for paper.

Through Hon. J. D. Kennedy, Consul-general at Shanghai, China, were received, from Dr. D. J. Macgowan, Chinese customs, Wenchow, China, an alcoholic specimen of sturgeon, a pair of stockings, and 2 wooden models.

From Hon. William T. Rice, United States Consul at Leghorn, Italy, were obtained, by purchase, 6 rare medals, as follows: Bronze medal, 1779, Rhode Island fight; silver medal, 1780, armed neutrality of Russia, Denmark, Sweden, and Holland during the war of independence of America, with the arms of the four States "Ichova wrecker der verbonden;" a duplicate of the same medal; silver medal, 1784, Médaille offerte par la Societé "Voorveÿheid en ÿver" to the State of Friesland, Holland (Friesland arms) on the occasion of the reception of John Adams as an ambassador of the United States; silver medal—the Inde-

pendence of the United States recognized by Holland "Libera soror," April 19, 1782; and a silver medal—Treaty of Commerce between the United States and Holland, October 7, 1782.

Seven specimens of celestite with sulphur crystals, procured from the largest sulphur mine in the province of Caltanissetta, Italy, were collected by the United States Consul at Catania, and transmitted to the Museum by the Department of State.

From Mr. Walter Koehler, of Broken Hill, Australia, through the State Department, was received a very beautiful collection of minerals, and also some specimens of ores.

The following consular officers have promised to assist in the collection of material: S. H. Boyd, Bangkok, Siam; C. C. Ellis, Rangoon, Bumah; Augustine Heard, Seoul, Corea; N. C. Gram, Iceland; Louis B. Grant, Cairo, Egypt; Victor A. Jenny, Macassar Celebes; James McIntosh, Tangiers, Morocco; E. Spencer Pratt, Teheran, Persia; E. D. Ropes, jr., Zanzibar, Africa; Harold M. Sewall, Apia, Samoa; Loudon A. Snowden, Athens, Greece; A. R. Webb, Philippine Islands; Erhard Bissinger, Beirut, Syria; Rounsevelle Wildman, Singapore, Straits Settlements.

TREASURY DEPARTMENT.

The National Museum is specially indebted to the Treasury Department for its valuable assistance in connection with the free entry of objects from foreign countries. Several valuable contributions have been made available in this way during the year. The bureaus of the Treasury Department have also shown much interest in the Museum, and special assistance has been rendered as follows:

Bureau of Printing and Engraving.—Through Hon. William M. Meredith, Chief of the Bureau, were received 262 unmounted Indian impressions of portraits, vignettes, and lathe-work.

Coast and Geodetic Survey.—Through Dr. T. C. Mendenhall, Superintendent, were received 69 specimens, consisting of fragments of human bones, clay vessels, and fragments of pottery from Pen Land, New River, N. C.

From Lieut. J. F. Moser, commanding steamer *Buche*, were received alcoholic specimens of fishes, snake, shells, and marine specimens from Florida Reefs.

Mr. E. D. Preston, of this Bureau, presented a crab, *Grapsus maculatus*, from Nonsuch Island, Bermuda Islands.

Revenue Marine Division.—Capt. W. C. Coulson, United States cutter *Rush*, presented the skin of a walrus, *Odobenus obesus*, an adult male from Walrus Island, Bering Sea.

Marine Hospital Service.—Supervising Surgeon-General John B. Hamilton presented a piece of supposed lignite, from a mine near Florence, used for fuel.

WAR DEPARTMENT AND THE ARMY.

Several officers of the Army have contributed material, and the

Quartermaster's Department has rendered valuable assistance in connection with the transportation to Washington of bulky material for the Museum.

From Lieut. Col. J. G. C. Lee, Vancouver Barracks, Wash., was received the skull of a mammal found in Oregon.

Maj. John H. Wilcox, Fort Keogh, Mont., presented an Indian bow from Yellowstone Park, Wyoming.

Capt. Charles E. Bendire, honorary curator of birds' eggs in the National Museum, presented a parent specimen of *Deudroica cerula*, nest and 3 eggs, and also an egg of *Molothrus ater*, collected by Mr. W. E. C. Todd from near Beaver, Pa.

Capt. John G. Bourke, Fort Ringgold, Tex., deposited a stone-headed war club of the Dakota Indians, obtained from "Fog Whirlwind," one of Sitting Bull's warriors; a collection of ethnological and archaeological objects from Arizona and New Mexico; a sling used by the Indians of Hidalgo, Mexico; and also presented some Mesquite beans.

From Capt. W. L. Carpenter, Whipple Barracks, Ariz., were received eggs and nests of *Spizella socialis arizonæ*, *Chondestes grammacus strigatus*, *Vireo huttoni stephensi*, *Psaltriparus minimus*, and *Icterus bullocki*; nests and eggs of Black-chinned Hummingbird (*Trochilus alexandri*), Western Wood Pewee (*Contopus richardsoni*), Lead-colored Bush-tit (*Psaltriparus plumbeus*), Woodhouse's Jay (*Aphelocoma woodhousei*) and Spurred Towhee (*Pipilo maculatus megalonyx*); nest and eggs of *Zenaidura macroura*, *Contopus richardsoni*, *Spizella socialis arizonæ*, and *Trochilus alexandri*; eggs of *Harporhynchus crissalis*, *Habia melanocephala*, *Mimus polyglottus*, *Icterus cucullatus nelsoni*, and *Chondestes grammacus strigatus*.

From Capt. Henry Romeyn, Fort Ringgold, Tex., were received 5 specimens of fossil oysters and a piece of petrified wood.

Capt. Thomas Sharp, Fort Russell, Wyo., presented anatomical specimens.

Capt. O. M. Smith, Fort Keogh, Mont., presented a Springfield bullet partially pierced by a nail at target range.

Lieut. Robert H. Fletcher presented gaming-sticks used by Hupa Indians of California; and Mr. Fletcher, through Dr. R. H. Fletcher, of the Army Medical Museum, presented a dance-stick, 2 arrows, and a photograph of the "White Deer Dance" of the Hupa Indians.

Lieut. J. S. Winn, Fort Huachuca, Ariz., sent a mammal skin from the Huachuca Mountains.

Lieut. W. W. Wotherspoon, through Capt. Henry Romeyn, presented 2 living snakes.

Dr. W. H. Forwood, of the Soldiers' Home, Washington, D. C., presented 20 crystals of sphene from Bridgewater, Pa., selenite crystal from Ohio, and 4 specimens of quartz from Crystal Mountain, near Hot Springs, Ark.

From Dr. W. T. Matthews, Fort Wingate, N. Mex., was received a pair of wooden tongs used by the Navajo women for picking the fruit

of the cactus, and also specimens of dyed wool from the Navajo sheep, and dyestuffs used by the Navajo women of New Mexico and Arizona.

Dr. Edgar A. Mearns, Fort Snelling, Minn., presented a specimen of Western Evening Grosbeak (*Coccothraustes vespertinus montanus*), of first plumage and new to the collection.

Dr. J. C. Merrill, Fort Reno, Ind. T., presented a nest of *Virco bellii*. Dr. Merrill also presented a small collection of Grasshopper-mice, Meadow-mice, a Cotton-rat, and three bats.

Dr. R. W. Shufeldt, Takoma Park, D. C., presented a specimen of *Desmognathus fusca* from Takoma Park; a Dragon-fly (*Tramea carolina*) from Maryland; 2 photographs of a Navajo woman weaving a belt; 8 alcoholic specimens of reptiles and batrachians, and 2 alcoholic specimens of tarantulas from Fort Wingate, N. Mex., and an Evening Grosbeak, a skin of mink (*Putorius vison*) from Sligo Creek, 3 alcoholic specimens of *Lagomys princeps* collected in the Sierra Nevada Mountains, an Evening Grosbeak in the flesh from Fort Wingate, N. Mex., and 2 snakes and a tree-frog from Takoma Park.

Rev. J. T. Potter, chaplain, Fort Clark, Tex., presented a skin of Massena Quail, *Cyrtonyx montezumae*.

Mr. Charles Ruby, acting hospital steward, Fort Randall, S. Dak., presented fossil bones of reptiles and fish from Fort Randall, and also 4 specimens representing 3 species of birds' skins, comprising *Porzana carolina*, *Coccyzus erythrophthalmus*, and *Setophaga ruticilla*.

Mr. G. J. Westerdahl, hospital steward, San Carlos, Ariz., presented a living Gila monster.

From Mr. E. R. Hodge, Army Medical Museum, was received a set of United States stamped envelopes, 2 cent issue of 1883.

Through the Quartermaster's Department, a bidarka and outfit from Akoutan Island was received from the Alaska Commercial Company, of San Francisco, Cal.

Six specimens of onyx from a quarry 28 miles from Prescott, Ariz., collected by Mr. William O. O'Neill, were transferred to the Museum through the courtesy of the Quartermaster's Department.

The important services rendered by Capt. Charles E. Bendire as honorary curator of birds' eggs in the National Museum, are very much appreciated. Most of the important additions of the year are the direct result of his active energy in developing the collection. Capt. Bendire has now completed his manuscript on the Life Histories of North American Birds, which will be published as a special bulletin of the Museum.

NAVY DEPARTMENT AND THE NAVY.

From Commander William L. Folger, chief of the Bureau of Ordnance, was received a specimen of nickeliferous pyrrhotite from Sudbury, Ontario, Canada.

Lieut. Commander F. Hanford collected a brass "fig-leaf," which was presented to the Museum by Dr. Hugh M. Smith, of the U. S. Fish Commission.

Capt. A. V. Reed presented a Dragon-fly (*Cordulegaster*) and a Turtle (*Testudo tabulata*) from Brazil.

Capt. Mason N. Shufeldt transmitted a collection of photographs, illustrating some of the ethnological objects collected during his voyages.

Lieut. T. Dix Bolles presented a collection of ethnological objects, 64 shells, sea-urchins, corals, echini, a canoe and its fittings, a basket, and a gold mat from Samoa: a tapa cloth from the Marshall Islands, and a fire-bowl from Japan.

Lieut. W. I. Moore, collected from the Fiji Islands, a carved wooden vessel inlaid with shell and bone, known as a "priest bowl." This object was presented to the Museum by Prof. I. O. White, of the West Virginia University, Morgantown, W. Va.

Lieut. Charles F. Pond presented specimens of grasshoppers and a firefly from Guatemala, Central America.

Mr. L. G. Billings, medical inspector, presented a collection of birds' skins, made by him during the recent cruise of the *Pensacola* to Africa. The collection also includes some specimens from St. Helena.

Mr. O. G. Dodge, of the U. S. Navy, collected 12 specimens of agatized wood, silicified wood, garnet pebbles, and smoky quartz, which were presented by the U. S. Geological Survey, through Major J. W. Powell, director.

The thanks of the Museum are due to Dr. James M. Flint, honorary curator of the section of materia medica, for the very efficient manner in which he has continued to administer the affairs of his section.

DEPARTMENT OF THE INTERIOR.

Through Hon. John W. Noble, Secretary, was received from Hon. J. C. Sloenn, United States surveyor-general, Tallahassee, Fla., a collection of old surveying instruments, consisting of a transit comprising a telescope tube, a brass frame, a wooden tripod and detached legs, one solar compass (injured in a fire), a sextant in case, a standard chain, and a tripod and leveling-head for the solar compass.

Indian Office.—From Mr. George A. Allen, Indian agent, Colorado River Agency, Parker, Ariz., were received 4 photographs of the Mojave Indians; a collection of pressed flowers and plants; alcoholic specimens of insects; 4 lizards representing 3 species from the Colorado River Indian Reservation; ethnological objects, and 5 pieces of pottery from the Mojave Indians.

Dr. Z. T. Daniel, of Cheyenne River Agency, S. Dak., presented stone implements, teeth, and pottery found in the remains of Indian houses, circular mounds, from 10 to 50 feet in diameter, with depressed centers. These houses were formerly inhabited by the Rees Arickarees of the Pawnee family. These objects were collected by Dr. Daniel at the suggestion of Gen. T. J. Morgan, Commissioner of Indian Affairs. Dr. Daniel also presented scrapers, arrow-heads, and broken pieces or chips

from the ruins of houses formerly occupied by the Ree Indians; flint scrapers found on the ground of the agency, a flint scraper from near Fort Bennett, and a portion of a gun found by an Indian on the Custer battle-field.

From Mr. Frank D. Lewis, special agent, Indian Department, through Mr. T. J. Heiberger, of Washington, D. C., were received 2 ghost shirts from the late "Wounded Knee" Indian fight.

Patent Office.—From Col. J. W. Babson was received a patent granted to John W. Brough and Jesse Talbot for a refrigerator, March, 1813, signed by James Madison, President, and James Monroe, Secretary of State.

From Col. F. A. Seely were obtained by purchase 27 photographs of ethnological objects from Spain.

U. S. Geological Survey.—The following statement will show the extent of the accessions from the survey during the year:

Through Major J. W. Powell, director, were received 111 photographs illustrating typical exposures of strata, contacts, folds, joints, etc.; 47 specimens of cretaceous fossils from Alabama, Mississippi, Texas, and Colorado; 4 specimens of minerals from Colorado and Arkansas, consisting of foliated kaolin, molybdenite, scheelite, and cuprodesclowitzite; a crystal from Mineo, Catania, Sicily; 2 geologic models, one labeled "Geologische Karte des Sentis, aufgenommen von Arnold Escher von der Linth," with sections set up according to the method proposed by Mr. Albert Heim, of Zurich, and the other representing one of a series prepared in wax and plaster by Mr. Willis in superintending the experiments upon the reproduction of geological structures by horizontal pressure; 4 specimens of apophyllite and a specimen of analcite from New Almaden, Cal.; specimen of cinnabar in barite from Almaden, Spain, crystallized cinnabar from the Reddington Mine, Knoxville district, California, and a collection of quicksilver (these collections were all made by Dr. G. F. Becker); 10 specimens of cerussite from Polonia Mine, Rosita, Colo., collected by Mr. Whitman Cross; silicified wood; 12 specimens of agatized wood, garnet pebbles, and smoky quartz, collected by Mr. O. G. Dodge, U. S. Navy; 2 specimens of gadolinite from Devils Head Mountain, Colorado, one specimen being the original material used by Mr. L. G. Eakins in identifying and describing the mineral from this locality (deposit); 3 specimens of minerals from Glastonbury, Conn., and 13 specimens from various localities in Colorado, most of it being the original material upon which Dr. Hillebrand, by whom the specimens were collected, has done scientific work; Dr. Hillebrand also collected 45 specimens of brochantite and malachite from the United Verde Mine, Jerome, Ariz.; 40 specimens of kyanite in quartz, 80 specimens of dumortierite in quartz, and 74 specimens of dumortierite in quartz from Clip, Ariz.; 3 specimens of white pulverulent sulphide of zinc from Galena, Kans., and 3 specimens of barite pseudomorph after crinoid stems and shells from Seda-

lia, Mo., collected by Dr. W. P. Jenney; specimen of agatized wood from Chalcedony Park, Ariz., and a specimen of smoky quartz from near Santa Fé, N. Mex., collected by Mr. F. H. Knowlton; minerals from Delaware County, Pa., 4 specimens of garnet, 4 of garnet in muscovite, and 2 of chalcedony, collected by Dr. E. A. Schneider; specimens of garnet, epidote and enargite, from Alpine County, Cal., collected by Mr. H. W. Turner; a specimen of *Gyroceras* (?) from the lower Carboniferous, Indiana, and 4 specimens of Devonian fish remains from Scotland, collected by Mr. Charles D. Walcott; 17 specimens of chalcedony from Fossil Point, Wyoming, collected by Prof. Lester F. Ward; specimen of chrome tourmaline from Montgomery County, Md., collected by Mr. Williams; 2 specimens of crinoids from the Trenton Limestone, Ottawa, Canada.

From Mr. Marcus Baker were received 28 specimens of *Helix thyroides* from Washington, D. C. Mr. Baker also forwarded for Mr. E. W. Boker, a Marmoset, *Hapale jacchus*.

From Dr. George F. Becker were received 2 specimens of iridosmine from California.

From Mr. Frank Burns was received a collection of fresh-water mollusks from the Potomac River.

Mr. W. H. Dall presented a collection of fresh-water shells from California and Oregon, a specimen of *Aceridium americanum* from the District of Columbia, 2 specimens of *Chernes* sp., taken from a house-fly, 2 specimens of *Aspergillum vaginiferum* Lam., 8 specimens of *Strombus fasciatus*, and a specimen of *Bulimus Marielinus* from the Indo-Pacific, 5 specimens of *Bulla* sp. from Florida, and a turban from India.

From Dr. David T. Day was received a specimen of silica made by electrolysis from quartz, by the Herault Aluminum Company, of Boonton, N. J., a specimen of corundum from Shimersville, Pa., and 5 specimens of diaspore from Chester, Mass.

From Prof. J. S. Diller were received 2 specimens of conglomerate, one from near Point of Rocks, Md., and the other from near Leesburg, Va., and 2 specimens of conglomerates from Maryland.

Mr. William Hallock transmitted for Mr. J. C. Brady, of Wheeling, W. Va., a piece of carbon deposited by natural gas.

From Dr. W. F. Hillebrand was received a specimen of yttrougummite from Arendal, Norway.

Mr. J. P. Iddings presented a volcanic bomb from the island of Lipari, Mediterranean Sea, and a specimen of basalt with inclusion of vitrified sandstone from Monte Gimmelaro, Etna eruption of 1886.

From Dr. Walter P. Jenney was received a specimen of native lead, with minium and anglesite from Mineral Hill district, near Hailey, Alturas County, Idaho; specimen of native white sulphide of zinc from Moll mine, Galena, Kans., and 154 specimens of minerals consisting of eudialyte, manganopectolite, rutile, aegirite, monticellite, leucite, and vesuvianite obtained from Dr. Jenney by purchase.

From Mr. F. H. Knowlton was received a specimen of Spotted Turtle (*Chelopus guttatus*) from Laurel, Md., and through Mr. Knowlton was received a specimen of *Platysamia columbia* Grote, from Montana, transmitted by Mr. E. F. Hanly, of Bozeman. Mr. Knowlton presented 2 samples of lignite from the Potomac formation near Richmond, Va.

From Mr. S. Ward Loper, assistant geologist, Middletown, Conn., was received a specimen of folded gneiss and a specimen of Triassic trap-rock from Baileyville, Conn.

From Dr. W. H. Melville was received a specimen of bismuthinite, with chalcopyrite in quartz, from Mariposa mine, Rosario district, Sinaloa, Mexico, and from Dr. Melville were also received specimens of napalite, cinnabar, metastibnite, elaterite, and livingstonite.

From Dr. A. C. Peale was received a sample of "Diamond Polish" (volcanic dust) from the Diamond Emery Company, Phillipsburg, Kans.

From Mr. I. C. Russell were received 3 specimens of coal from Alaska and Vancouver Island, a pouch of leather from Yakutat, Alaska, containing a stone fish used as a charm by medicine man, 2 stone mortars, an adze, a stone implement, and 2 faulted pebbles from Pinnacle Pass, Mount St. Elias, Alaska.

From Dr. E. A. Schneider was received a specimen of leuchtenbergite from Schischinsk, near Slatoïst, Southern Ural, Russia, and through Dr. Schneider was transmitted from Mr. A. Lösch, of St. Petersburg, Russia, 2 specimens of xanthophyllite (waluwite) and a specimen of ripidolite from Nikolaje-Maximilianowsk mine, near Slatoïst, Siberia.

From Mr. T. W. Stanton were received 18 arrow-points, found in a field on Cowikee Creek, near Eufaula, Ala.

Through Mr. C. D. Walcott was received a mud-marked limestone slab from Rathbone Brook, Herkimer County, N. Y., and 2 slabs of slate showing bedding, cleavage, and faulting.

From Prof. Lester A. Ward were received 2 fine specimens of *Zamia integrifolia* from Florida, and a natural grafting illustrated by specimens from black-oak trees.

From W. C. Weed were received 2 specimens of coal from Cinnabar Coal Field, Montana.

Dr. C. A. White presented a collection of mixed shells from Iowa and other localities, a gorgonian, specimens of gypsum, and a stalactite.

Several of the honorary curators in the National Museum are officers of the Geological Survey, and the Museum is much indebted to them for their coöperation with its work. These are: Mr. C. D. Walcott, in charge of paleozoic fossils; Dr. C. A. White, in charge of mesozoic fossils; Mr. William H. Dall, in charge of mollusks and cenozoic fossils, with Dr. R. E. C. Stearns as adjunct curator; Prof. Lester A. Ward, in charge of fossil plants; Prof. F. W. Clarke, in charge of minerals, and Prof. O. C. Marsh, in charge of vertebrate fossils.

DEPARTMENT OF AGRICULTURE.

From the Department of Agriculture, through the Secretary, have been received the following objects:

Twenty-seven photolithographs illustrating the forest destruction and reforestation in France, 2 maps showing the forest distribution, 100 small label maps representing the distribution of species, a section of a tulip tree and a historical chart of its growth were deposited.

Numerous collections have been received from the divisions of animal industry, entomology, botany, forestry, and economic ornithology and mammalogy. The following statement shows the extent of the material contributed.

Through Dr. C. Hart Merriam, fossils from Fort Bridger, Wyo., and fragments of the jaw and radius of a bear from Grant County, N. Mex.; 11 specimens of land shells from Texas, representing 4 species; 5 horned toads (*Phrynosoma brevirostre*), collected by Mr. V. Bailey in Idaho; specimens of *Exogyra arictina* from Painted Cave, Rio Grande Bank, Texas, and 9 species of land and fresh-water shells from the same locality, collected by Mr. William Lloyd; 2 turtles representing 2 species from Texas (deposit); a Pacific Pine-snake (*Pituophis catenifer*) from Marshall, Wash. (deposit); a woman's suit, suit of a man, boots, pantaloons, etc., and a sleeping-bag obtained from the Eskimos of West Greenland; beadwork of the Piegan Indians of Montana, and pouches of the Montagnais Indians of Canada, collected by Dr. F. H. Hoadley (deposit); a specimen of Bruennich's Murre (*Uria bruennichii*) from Throg's Neck, Long Island, collected by Mr. A. Ferreira; 5 species of land-shells, collected by Mr. William Lloyd, and 31 reptiles and batrachians from Idaho (deposit).

Through Prof. C. V. Riley: Specimens of alcoholic insects, chiefly coleoptera from southern California, collected by Mr. D. W. Coquillet, of Los Angeles; 383 species of North American lepidoptera and 62 species of European lepidoptera; 54 species of coleoptera, collected in California by Mr. Coquillet, some of the species being new to the collection; 110 specimens representing 54 species of North American coleoptera, many of which are new to the collection, collected by Mr. H. F. Wickham, of Iowa City, Iowa; collection of insects, made by Prof. L. Brner, of Lincoln, Nebr., consisting of 225 species of coleoptera from the United States; 20 species of coleoptera from Mexico; 29 species of hemiptera from Mexico and the United States; 75 species of hymenoptera from the same localities; 4 species of diptera from the United States; 1 species of neuroptera from the United States, and 6 specimens of *Vanessa californica* from Idaho; 25 species of North American coleoptera retained from a collection sent by Prof. A. J. Cooke, of Lansing, Mich., for identification, and transferred to the Museum by Prof. Riley; 425 specimens representing 60 species of lepidoptera, and 2,400 specimens representing 375 species of coleoptera, collected in California and Washington by Mr. A. Koebele; 30 species of coleoptera collected by

Mr. Coquillet in southern California; 400 species of coleoptera and 130 species of hemiptera, collected by Prof. L. Bruner; 71 species of North American coleoptera collected by Prof. Bruner, some of which are new to the collection, and a series of lepidoptera, 17 specimens representing 17 species, and 200 specimens of coleoptera representing 20 species, most of which are rare and valuable, collected in San Diego County, Cal., by Mr. Coquillet.

The following contributions have been received from the officials and other employés of the Department.

From Mr. H. B. Ayres were received 7 specimens of ores of iron and manganese from Minnesota and Dakota.

From Mr. Nathan Banks were received 10 species of coleoptera, among which was a specimen of *Zacotus matthewii* Lac., collected by Mr. Trevor Kincaid, of Olympia, Wash., and also 20 species of arachnida, all new to the collection.

Mr. W. B. Barrows, presented 2 snakes from Brookland, D. C., one of which was a blotched kingsnake (*Ophibolus rhombomaculatus*).

From Dr. B. E. Fernow was received a model of a tree-planting machine invented by Mr. Thomas Stratton, and a view of a Japanese cedar (*Cryptomeria Japonica*).

Mr. O. Heidemann presented 6 specimens of *Necoborus petiti* Uhl.

From Dr. C. Hart Merriam were received 3 eggs of *Spizella breweri*; 3 species of fresh-water gastropods from Salmon River, and one species from Needle Peak, Idaho; numerous specimens representing 4 species of fresh-water mollusks from Salmon River and Shoshone Falls, Idaho; 2 specimens of fossil wood from Elm Creek, New Eagle Pass, Texas; 9 specimens of carboniferous limestone fossils, *Zaphrentis* sp., from Needle Peak, Idaho; a skin of Indian flamingo (*Phaenicopterus andersoni*), new to the collection; through Mr. W. B. Barrows, a worm (*Aphrodita aculeata*), 4 specimens representing 2 species of ascidians, 2 shrimps, and dry shells, collected in and near the Island of Grand Manan, New Brunswick, by Mr. S. F. Cheney; and a horned toad (*Phrynosoma coronatum*) from Twin Oaks, San Diego County, Cal.

From Mr. C. W. Richmond was received a slate-colored junco (*Junco hyemalis*) from Washington, D. C.

From Prof. C. V. Riley was received a collection of *Tineida* containing 900 specimens representing about 430 North American species, and 500 specimens representing about 140 European species; 1,100 specimens representing about 240 North American species of micro-lepidoptera, and small land-shells from Blanco County, Texas.

Mr. E. A. Schwarz presented 2 species of *Bittacus*, new to the collection, from Fort Pendleton, Maryland.

The very valuable services rendered by Prof. Riley, honorary curator of insects; Dr. B. E. Fernow, honorary curator of the section of forestry; and Dr. George Vasey, as honorary curator of the Department of Botany, have been continued.

UNITED STATES FISH COMMISSION.

The following collections and contributions have been transmitted to the National Museum, through Col. Marshall McDonald, U. S. Commissioner of Fisheries:

Twenty-eight specimens of fishes, collected by the steamer *Albatross* on the Pacific coast of North America during 1889, being the types of the new species recently described by Prof. Charles H. Gilbert in the "Proceedings of the National Museum;" specimen of Rainbow-trout (*Salmo iridens*) artificially reared at Bucksport, Me., and 2 specimens of the Black-fin White-fish (*Coregonus nigripinnis*), collected in Milton Lake, Minnesota, by Mr. James R. B. Van Cleane; a collection of 60 species of fishes from the vicinity of Charles City, Va., collected by Mr. W. P. Seal, during September and October, 1890; a collection of 1,128 specimens, representing 33 species of brachyuran and anomouran crustaceans, collected by the *Albatross* on the Pacific coast of North America; 327 specimens of echini obtained from the collections of the *Albatross* in the North Pacific Ocean; a small collection of brachyuran crustaceans obtained by the steamer *Grampus* off the coast of Florida; an alcoholic collection of the type series of fresh-water fishes, collected during the summer of 1889 in Missouri, Arkansas, Colorado, Utah, Alabama, and Georgia, by Prof. S. E. Meek, Dr. D. S. Jordan, C. H. Bollman, B. Fesler, and others; a collection of fishes, numbering 90 specimens, made by the *Albatross* from the Galapagos Islands and Panama, during the spring of 1888; a collection of mollusks, numbering 163 specimens, collected by the schooner *Grampus* off the west coast of Florida during the spring of 1889; a collection of fishes, chiefly from Brazil and some from Georgia and Alabama, made by the *Albatross* during the cruise from Norfolk and San Francisco during 1887-'88; fishes and reptiles collected in Alabama by Mr. P. H. Kirsch and party in 1889; a collection of fishes made in Georgia in 1889 by Messrs. C. H. Bollman and Bert. Fesler; a small collection of fishes comprising *Halichares radiatus*, *Lutjanus analis*, *Malthe radiata*, *Eulamia limbata*, and *Lepomis pallidus*, from Florida, made by Dr. J. A. Henshall in 1889; fishes from the Gulf of Mexico, obtained by the *Grampus*; 447 specimens of crabs belonging to the genus *Panopeus*, collected by the Fish Commission during recent years; and specimens of a small variety of barnacle attached to the rushes on the shore of Clear Water Harbor, Florida, collected by Mr. W. H. Abbott.

From Mr. J. E. Benedict of the steamer *Fish Hawk* was received a skin of Red-tailed Hawk (*Buteo borealis*), from Bulls Island, Calibogue Sound, South Carolina.

Mr. W. C. Kendall presented 30 birds' skins, representing 27 species, from near Port Royal, S. C.

From Dr. Hugh M. Smith was received a collection of dried plants, representing 22 species, obtained by him at various littoral points

in New Jersey and Virginia; a stone taken from the stomach of a Coot (*Fulica americana*) from Roanoke Island, North Carolina; a small collection of dried plants from St. George's Island, Maryland; a brass "fig leaf" collected by Lieut. Commander F. Hanford, U. S. Navy; 2 birds' skins, Golden-headed Manakin (*Pipra aurocapilla*) and Blue-crowned Manakin (*Pipra coronata*), from Ecuador, South America; skin of Western Horned Owl (*Bubo virginianus subarcticus*), from New Mexico; specimens of *Pecten magellanus*, from the coast of Maine; 10 species of pressed plants from St. George's Island, Maryland; nests and eggs of *Vireo flavifrons*, *Vireo olivaceus*, *Dendroica aestiva*, *Dendroica discolor*, *Contopus virens*, *Falco sparverius*, and *Aegialitis vocifera*, from the District of Columbia; 2 water snakes, *Tropidonotus sipedo*, from the Potomac River; 13 small turtles from the Potomac River collected by Mr. William P. Seal, and 4 photographs showing a side-wheel steam-packet, the raising of a wreck in Norfolk Harbor, and the wreck of a four-masted schooner.

The valuable services of Mr. Richard Rathbun as honorary curator of Marine Invertebrates; Dr. Tarleton H. Bean, as honorary curator of Fishes, and Capt. J. W. Collins as honorary curator of Fisheries and Naval Architecture have, through the courtesy of Col. McDonald, U. S. Commissioner of Fisheries, been continued.

BUREAU OF ETHNOLOGY.

The following contributions have been received from the bureau and its officers:

A collection of ethnological and archaeological material and specimens of pottery was transferred to the Museum by Maj. J. W. Powell, director.

From Dr. H. W. Henshaw was received a specimen of *Ophibolus rhombomaculatus*, from Falls Church, Va.

Dr. J. W. Hoffman presented a model of Menomonee medicine-man's grave with symbols; a crayon sketch of Oshkosh, and the great lodges of the Menomonee tribe where funeral services are held over the medicine-man on the anniversary of his death.

From Mr. James Mooney was received a pair of Cherokee ball sticks.

J.—REVIEW OF THE RESULTS OF THE COÖPERATION OF THE GOVERNMENT DEPARTMENTS AND BUREAUS DURING THE DECADE ENDING JUNE 30, 1891.

When the enormous increase, during the last decade, in the extent and importance of the Museum collections, from a scientific as well as from a popular standpoint, is taken into consideration, it seems proper to make special mention of the important results derived during that period from the system of coöperation inaugurated many years ago

between the Smithsonian Institution and the various departments and bureaus of the Government. The collections made by the Wilkes exploring expedition, the Perry expedition to Japan, and other naval expeditions, and the material gathered by the scientific officers of the Pacific Railroad survey, the Mexican Boundary survey, and the surveys carried on by the Engineer Corps of the Army, constitute the very groundwork of the collections, the nucleus upon which has been built its present structure. Indeed, had it not been for this coöperation on the part of the Government departments, the successful development of the collections would be extremely difficult, perhaps impossible, with the limited resources at the command of the Museum. The friendly interest displayed by officials at home and abroad, at all times and in every capacity, not only when officially detailed but during the leisure hours at their disposal, is worthy of the greatest praise and encouragement. Nor has this interest been confined to any one bureau or department. The friendly competition which has been engendered has aroused to action officers in almost every bureau of each of the departments. This interest has been shown not only in the collection of an enormous amount of material, but in its proper preservation and careful transportation to Washington, when collected.

The special ways in which this coöperation on the part of the departments and bureaus of the Government has manifested itself, may be thus enumerated:

(1) By assistance rendered to persons conducting investigations for the Smithsonian Institution.

(2) By the direct effort of Government officials in making collections for the National Museum, which is under the direction of the Smithsonian Institution.

(3) By the willingness of Government officials at distant points to notify the Institution of the occurrence of remarkable specimens and phenomena.

(4) By the transfer to the National Museum of collections which had been deposited in one or another of the departments for safe-keeping.

(5) By assigning persons to the Smithsonian Institution for special training, with a view to enabling them to observe accurately and to collect intelligently when afterwards engaged in their regular duties. (This is applicable chiefly to the Navy Department.)

(6) By transmitting to the Institution the results of observations as well as collections made by officers, at their post of duty, in behalf of the Institution.

(7) By assistance rendered in connection with the transportation of collections to Washington.

(8) By the receipt of collections made by other departments of the Government service, and studied and identified by officers of those departments before being transferred to the custody of the Museum.

(9) By the detail of officers connected with various departments and

bureaus of the Government, to act as honorary curators of collections in the National Museum.

A brief résumé of the special manner in which each department has contributed to the welfare of the National Museum, is here presented.

DEPARTMENT OF STATE.

The ministers, consuls, and other officers of the Department have always shown a great willingness to further the interests of the National Museum in foreign countries. Through the courtesy of the Department letters of introduction to them have been furnished from time to time, at the request of the Secretary of the Smithsonian Institution, and they have frequently been requested by the Secretary of State to aid persons collecting for the Museum. The Department has also kindly indorsed and forwarded letters from the Institution to its ministers and other officers, asking their coöperation in securing special desiderata to fill important gaps in the Museum collections.

Valuable assistance has also been rendered by the State Department in obtaining special facilities in connection with the exportation from foreign countries of material intended for the Museum. Among the most important accessions acquired through the coöperation of the Department and its officers may be mentioned the following: Specimens of native handiwork from Western Africa, sent by Mr. Smyth, the United States minister at Liberia; a collection of samples of wool from the Technological Museum at Sydney, New South Wales, through Hon. G. W. Griffin, United States consul at Sydney; a collection of antique copper, silver, and gold coins from Ceylon, Europe, the United States, and South America, from Hon. William T. Rice, United States consul at Horgen, Switzerland; a canoe similar to those in use by the natives of Hawaii, presented by the Queen of Hawaii; specimens of iron ore coal, and coke from Rio Grande de Sul; a collection of woolen, worsted, silk, and cotton fabrics, gathered by Hon. W. F. Grinnell, United States consul at Bradford, England; specimens of sisal, through Hon. Thomas J. McLain, United States consul at Nassau, West Indies, and a piece of rope made of human hair and used in hoisting building material in the construction of a Buddhist temple at Kyoto, Japan, transmitted by Hon. John T. Swift, United States consul at Tokio, Japan.

TREASURY DEPARTMENT.

The Treasury Department has extended its friendly offices in connection with the free entry of material from abroad, and has greatly aided the work of Museum investigators by allowing the free entry of scientific outfits. Through the courtesy of the Department a valuable collection of diamonds, pearls, and gold ornaments, which was presented in 1840 to the United States Government by the Imam of Muscat, and

had been kept in a vault in the Treasury Department until 1887, when it was transferred to the Museum.

The U. S. Coast and Geodetic Survey and the Revenue Marine Division have frequently afforded special facilities to Museum explorers. Valuable contributions of material and information have been made by officers of the Light-House Board and the Life-Saving Service. Specialists sent out by the Museum have, through the courtesy of the Superintendent of the Coast and Geodetic Survey, been supplied with charts of the regions along the coast to be explored. In April, 1880, Dr. Tarleton H. Bean was detailed to visit Alaska to collect fishery statistics, fishes, birds, and other objects of interest. Through the courtesy of the Coast Survey he was permitted to accompany the expedition on the schooner *Yukon*, and was given all possible assistance and facilities in making collections. More than eighty species of fishes and fifty species of birds were obtained on that occasion. The Coast Survey, in connection with the Smithsonian Institution, secured important information as to the relative height of points upon the surface of the North American continent. Mr. W. J. Fisher, who was stationed at Kadiak, Alaska, gathered much valuable material relative to the manners and characteristics of the native tribes. On the occasion of the visit of Mr. Henry Elliott to the seal islands of Alaska, on business of the United States Government, the Secretary of the Treasury kindly permitted a taxidermist, selected by the Smithsonian Institution, to accompany him for the purpose of collecting specimens for the Museum, and extended important aid in facilitating the preservation of the material secured.

The interest in the photographic exhibit of the Museum at the Cincinnati Exposition was materially increased by a set of photographs illustrating the methods of mounting prints, obtained through the courtesy of the Superintendent of the Coast and Geodetic Survey, and a collection of photographs of counterfeiters, illustrating the uses to which photography has been applied in connection with the requirements of the Government service, was secured, through the kind offices of Mr. John S. Bell, Chief of the Secret Service Division. An interesting series of proofs of the current bonds and currency notes, and of gold and silver certificates, coupons, and registered bonds, was presented by the Chief of the Bureau of Engraving and Printing.

In 1881, under instruction of the Treasury Department, through Mr. E. W. Clarke, Chief of the Bureau of Revenue Marine, Capt. Hooper, in command of the revenue cutter *Corwin*, visited the Arctic coast. He was instructed to take Mr. Nelson, an agent of the National Museum, to St. Michaels, and give him an opportunity to visit St. Lawrence Island for the purpose of collecting Eskimo objects. Mr. Nelson obtained on the island, in addition to a fine collection of implements, utensils, dresses, etc., a large number of crania, filling an important deficiency in the Museum collections. In 1884 the Chief of the Bureau

of Revenue Marine, instructed its captains in Alaska to assist Mr. James G. Swan in his explorations for the Institution, by receiving him and his collections on board, whenever such action did not interfere with the regular service of the vessels. The commander of the revenue steamer *Key West* was instructed to assist Mr. Hemphill in carrying on his explorations of the Florida Keys in behalf of the Museum. In 1885 the *Corwin* again visited the Arctic Ocean, and parties were sent up the Kowak and other rivers emptying into Kotzebue Sound. Mr. Charles H. Townsend, an experienced collector, accompanied the vessel, and collected many interesting objects in ethnology and natural history. During the year 1887 the assistance of the Revenue Marine Division was asked in procuring for the Museum specimens of "bidarkas" or Eskimo kyaks. Capt. Healy was requested to obtain specimens on his next visit to Alaska, and upon his return six of these objects were placed in the hands of the Alaska Commercial Company for shipment to Washington.

A most important research into the natural history of the Atlantic coast of the United States has been carried on by the Institution with the coöperation of Mr. S. I. Kimball, Superintendent of the Life-Saving Service. In the early part of 1883, circulars from the Institution were distributed by him, asking the keepers of life-saving stations for telegraphic notification of the occurrence or capture of any remarkable marine animal. This arrangement has been productive of many interesting and valuable results. The specimens received are often of great scientific importance, and it is hoped that the system may continue to be as productive of good results in the future as it has been in the past.

The Light-House Board has extended aid by instructing the keepers of light-houses and light-ships to make observations in regard to the temperature of the air and water, as well as to notice the occurrence of phenomena in connection with the migrations of marine animals. The data accumulated from this source have been of the utmost importance in connection with the general problems of ocean physics, and have been used to great advantage in solving many questions concerning the movements of fishes in relation to their physical surroundings. The keepers were also instructed to note the course of birds, especially as evidenced by their falling to the ground after striking against the light-houses on dark nights. The Light-House Board also kindly contributed to the Museum exhibit at the Cincinnati Exposition an interesting collection of cyanotype prints, showing the lights and flames used in the light-houses on the American coast.

WAR DEPARTMENT.

Through the courtesy of the Secretary of War and the Adjutant-General of the Army, instructions were given to the commanders of the military posts at Fort Keogh and Fort Maginnis, Mont., and Fort

McKinney, Wyo., to render all assistance in their power to Mr. Hornaday, the chief taxidermist of the Smithsonian Institution, and his party of assistants, who started in June, 1886, for Montana and Wyoming for the purpose of securing specimens of buffalo. Mr. H. H. Rusby, a well-known botanist of New Jersey, was engaged in 1880 in investigating the botany, natural history, and archaeology of New Mexico, and the War Department furnished some important facilities to aid him in his researches.

For many years the Secretary of War has permitted the quartermasters of the Army to forward from their posts boxes containing specimens intended for the National Museum. The transportation of 4 living buffaloes from Rapid City, S. Dak., to Washington, was greatly facilitated by Lieut. Col. William B. Hughes, chief quartermaster, Department of the Platte, at Omaha, Nebr., and by Capt. C. A. H. McCauley, now depot quartermaster at Portland, Oregon. A mahogany gun carriage, from the citadel of Santo Domingo City, was transmitted by Lieut. Col. G. L. Gillespie, of Engineer Corps, U. S. Army. Important assistance in securing collections and information has also been rendered by officers of the Army stationed at various posts throughout the country. Dr. R. W. Shufeldt, while detailed as medical officer at Fort Wingate, N. Mex., forwarded much interesting material and information.

Owing to the close relationship which had always existed between the Smithsonian Institution and the United States Signal Service, the coöperation of the latter in the prosecution of scientific researches, particularly in Arctic America, has resulted in most important additions to our knowledge of the natural history and ethnology of the countries north of the United States. Especial service has been rendered in this direction by Mr. Lucien M. Turner, who was detailed to Alaska by the Signal Service. In addition to the valuable collections made by him, he devoted much time to the study of the languages and customs of the people of that country, of whom little had been previously known. He also made many instructive and interesting observations relating to the natural history and ethnology of Northern Labrador, where he was attached to one of the Signal Service stations for several years. In 1886 it was found expedient to withdraw these stations from the outposts of Alaska and other northern countries, and thus the Museum was cut off from a most valuable field of research. Through the courtesy of Gen. A. W. Greely, Chief Signal Officer, photographs of meteorological records were contributed to the Museum exhibit at the Cincinnati Exposition, and a Secchi meteorograph, two sections of Beck's pantograph, and Meyers's autographic instrument, were added to the collection of scientific apparatus in the Museum. The results of twenty-five years meteorological correspondence and research, which had been conducted by the Smithsonian Institution, were transferred by it to the Signal Office, in accordance with the time-honored practice of the Institution,

namely, to discontinue research in any subject which is covered by the operations of any other branch of the service.

An arrangement has for several years been carried out with the Surgeon-General of the Army, by which the Smithsonian Institution transfers all its human crania to the Army Medical Museum, and receives in exchange skeletons and skulls of North American vertebrates. An agreement was also entered into between the National Museum and the Army Medical Museum, by which the latter undertakes to make post-mortem examinations of animals in the flesh received by the Smithsonian Institution, with the understanding that the Army Medical Museum retains the viscera of such animals, and returns the skeletons, unless otherwise specified, to the National Museum.

In 1888 several interesting objects were turned over to the Museum by the War Department. Gen. S. V. Benét transmitted from the Ordnance Museum a plaster model of the equestrian statue of Gen. McPherson; a section of an oak tree cut down by musket balls near Spottsylvania court-house, Va., and presented to the War Department by Gen. N. A. Miles, U. S. Army; and a Mexican saddle and bridle, manufactured in Mexico for Gen. Trevino, commanding the northern line of Mexico, and presented by him to Gen. E. O. C. Ord, U. S. Army.

Valuable services have been rendered by Capt. Charles E. Bendire and Dr. Henry C. Yarrow, of the Army, as honorary members of the Museum staff.

NAVY DEPARTMENT.

In 1881 the Navy Department expressed a desire to assign six recently appointed midshipmen to the Smithsonian Institution for the purpose of familiarizing themselves with the routine work of the scientific departments in the National Museum, in order that they might be able to take advantage of the training in case opportunity for natural history research should arise in connection with their future service, and also to enable them to perform the scientific duties for which the Navy Department had been obliged to employ civilians. This proposition met with the hearty approval of the Secretary of the Smithsonian Institution, and six young officers in the Navy, who had shown special liking for scientific matters during their educational course, were detailed to the Museum. They were instructed in taxidermic work and became quite proficient in the preparation of skeletons and skins of birds and mammals. Several of them also familiarized themselves with photography. This experiment having proved satisfactory, twelve other junior officers were assigned to the Museum. During the last few years the Department has found it inconvenient to continue the arrangement. While its discontinuance is to be regretted, there is no doubt that important results will be gained, both by the Navy Department and the National Museum, from the scientific training which has been given to these officers.

Several collections have, indeed, been already obtained as a result of the arrangement. Messrs. Dresel and Ackerman, the two ensigns assigned to the Smithsonian Institution, who were detailed by the Secretary of the Navy to accompany the *Yantic* on her voyage to Lady Franklin Bay in search of the Greely party, secured very valuable representations of the ethnology and natural history of that region. These have been turned over to the Museum and incorporated in the collections. Ensign J. B. Bernadou, who was ordered to Corea in 1883 for the purpose of prosecuting explorations under the direction of the Smithsonian Institution, forwarded a large and valuable collection of ethnological and zoölogical specimens, many of which were entirely new to the Museum. An interesting series of ethnological and natural history objects has been received from Lieut. W. E. Safford. Lieut. A. P. Niblack, during a cruise upon the Alaskan coast in 1888, secured an extensive representation of the ethnology and zoölogy of that region, and obtained material for an elaborate report upon the coast Indians of Southern Alaska and Northern British Columbia, which was published in the Report of the National Museum for 1888.

When Commander F. M. Green was detailed to determine the longitudes of points in the Pacific Ocean, he invited the coöperation of the Smithsonian Institution in making his work productive in results in natural history as well as in physical science. Through his efforts a large amount of valuable material was secured, and the Government authorities at Tokio and the officers of the Natural History Museum at Shanghai were induced to contribute collections to the Museum.

In November, 1885, Lieut. T. Dix Bolles was detailed for service in the National Museum by the Secretary of the Navy, and was assigned to the department of ethnology. He rendered valuable service in the classification and arrangement of the Eskimo collections, which he completed in 1888, when, to the regret of the Museum, he was recalled by the Navy Department and assigned to active duty.

The Secretary of the Navy also rendered important service by detailing the U. S. S. *Mohican* to bring to the United States a collection of stone images and archaeological objects from Easter Islands. Rear-Admiral Kimberly, of the Navy, forwarded a number of valuable ethnological specimens presented to the United States Government by Malietoa, Mataafa, and other Samoan chiefs.

The scientific work of the United States Naval Observatory has naturally brought about an affiliation with the Smithsonian Institution, and this coöperation has been effective in connection with the transmission of astronomical discoveries by telegraph. The Institution is indebted to the Superintendent of the Observatory for the receipt of telegraphic time at noon of each day, and a clock has been supplied, fitted up under the direction of the Observatory, by which the Observatory corrects aberrations in time.

Dr. James M. Flint and Dr. H. G. Beyer, of the Navy, have rendered

valuable assistance as honorary curators of the section of materia medica in the Museum.

DEPARTMENT OF THE INTERIOR.

The rapid growth of the museum collections in certain directions is due in a large degree to the addition of material turned over to it by the U. S. Geological Survey, after having served the purposes for which it was collected. This material is gathered by trained collectors sent out especially for the purpose, and has in most cases been carefully described and labeled before it reaches the Museum. Large quantities of rocks, minerals, ores, fossils, etc., have been forwarded annually by the Survey. The Museum is also indebted to the Survey for the valuable services rendered by the following gentlemen as members of the scientific staff: Dr. C. A. White, in charge of mesozoic fossils; Mr. Charles 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; Prof. Lester F. Ward, in charge of fossil plants, with Mr. F. H. Knowlton as assistant curator; and Prof. W. F. Clarke, in charge of minerals.

The Director of the Survey having organized a special department of maps and charts, the Smithsonian Institution offered the use of material comprising many thousands of sheets which had accumulated during forty years. This offer was accepted by Major Powell, with the understanding that the material would be properly classified and arranged, and remain at all time subject to the order of the Smithsonian Institution.

A great mass of material, embracing more particularly the building-stones, ores, combustibles, and forest timber of the United States, resulted from the industrial collections of the census of 1880. These collections represent complete series, as far as practicable, from all parts of the country, and are rendered especially valuable to the Museum by reason of the full and accurate descriptions which accompany the specimens. The collection of building and ornamental stones has been furnished in this way with thousands of specimens of marble, granite, sandstone, etc., and it is fair to assume that no established quarry in the United States is unrepresented. The collection of ores, which is also very extensive, contains representations from all the important mines of the country. The specimens are accompanied by authoritative reports upon their chemical and metallurgical properties, as well as upon their economic value.

In 1883 the collection of Washington relics was transferred from the Patent Office. It includes not only the old collection that had been on view for so many years, but also a large number of objects purchased some years ago by Congressional appropriation from Col. Lewis, and never unpacked after their arrival in the city. This collection is one of the most attractive to the visitors to the Museum. Through the cour-

tesy of the Commissioner of Patents specifications and patents illustrating the development of photography and the graphic arts in the United States and in Germany have been obtained.

Hon. N. H. R. Dawson, the Commissioner of Education, presented a series of very interesting publications relating to American educational history.

POST-OFFICE DEPARTMENT.

The Post-Office Department has contributed to the welfare of the Museum, although in a less degree than the others. In 1887 it presented to the Museum a collection of United States postage stamps, newspaper wrappers, stamped envelopes and newspaper stamps, numbering one hundred and seventy specimens. Through the courtesy of the Postmaster-General, the superintendent of the Dead-Letter Office has been instructed to inform the Museum of the receipt in his office of objects received which might be of value to the collections.

DEPARTMENT OF AGRICULTURE.

By far the largest part of the National Herbarium has been in the custody of the Department of Agriculture since 1869, when, at the request of the Secretary of the Smithsonian Institution, the Commissioner of Agriculture consented to house the material received either direct or through the Smithsonian Institution, and to permit the botanist of the Department to bestow as much time upon the collection as was necessary in order to keep it in a good state of preservation. The National Herbarium has for many years been under the charge of Dr. George Vasey, botanist of the Department of Agriculture. In later years the curator of fossil plants in the National Museum found it desirable to have available for his use, in comparing recent with fossil forms, a limited number of specimens within easy access, and in this way a second collection of recent plants has sprung up, both, however, forming parts of the National Herbarium, which will be transferred wholly to the care of the Museum, as soon as it shall be found practicable to provide proper accommodations for the collection. In 1886, Prof. C. V. Riley, entomologist of the Department, and honorary curator of the department of insects in the National Museum, gave his collection of North American insects, representing the results of his own labors for more than twenty-five years. This collection is by far the most important accession which the department of insects has ever received. The Museum is indebted to the Department of Agriculture for the volunteer services of the following named gentlemen as honorary members of the scientific staff: Prof. C. V. Riley, in charge of the department of insects; Dr. B. E. Fernow, in charge of the section of forestry; Dr. George Vasey, in charge of the department of botany, and Prof. W. O. Atwater, in charge of the section of foods.

U. S. FISH COMMISSION.

Exceedingly important contributions have been received yearly from the U. S. Fish Commission. Large quantities of material, embracing fishes, mammals, reptiles, batrachians, insects, birds, birds' eggs, fossils, plants, and geological and archaeological objects, have been transmitted to the Museum by the Commission, as the results of expeditions. Important contributions to our knowledge of the fauna of the West Indies have been made by the steamer *Albatross*. Searches made for new fishing grounds in the Gulf of Mexico and off the coast of Newfoundland and the adjoining region, abounded in results of great practical as well as scientific value. Explorations along the entire Atlantic coast of North America, from the Grand Bank of Newfoundland to the southern part of Florida and the Bahamas, produced results of biologic importance. Dr. Tarleton H. Bean explored the waters adjacent to Long Island, and succeeded in making some interesting scientific and practical discoveries. Mr. Charles H. Townsend made extensive explorations on the coast of California, and obtained valuable statistics in regard to the fisheries of the Pacific coast. He also visited Mount Shasta and carefully noted the distribution of animal life.

Through the courtesy of the Commissioner of Fisheries two employes of the Museum were permitted to accompany the schooner *Grampus* on its trip to the Gulf of St. Lawrence in 1887, for the purpose of investigating the natural history of that region, and especially of securing remains of the Great Auk. Success attended their efforts, and a large amount of material was secured.

The Museum is indebted to the Commission for the valuable services rendered by Mr. Richard Rathbun, as honorary curator of marine invertebrates; Dr. Tarleton H. Bean, as honorary curator of fishes, and Capt. J. W. Collins, as honorary curator of fisheries and naval architecture.

K.—EXPLORATIONS.

The material which has been received by the National Museum during the year, as a result of the work of the various collectors, who were either commissioned by the Museum to gather specimens or who offered their services, has greatly enriched the collections.

Through the courtesy of the Secretary of the Treasury, who commissioned Mr. Henry W. Elliott, of the Smithsonian Institute, to visit Alaska in the interest of the seal fisheries, a taxidermist of the Museum was allowed to accompany Mr. Elliott, Mr. William Palmer being selected for that duty. The results of this trip were highly gratifying, and valuable assistance was rendered by Capt. W. C. Coulson, of the U. S. Revenue Marine steamer *Rush*. The collections included a fine specimen of walrus, the first obtained by the Smithsonian Institution from Walrus Island since 1857. This was transmitted by Capt. Coul-

son. Collections of birds, birds' eggs and skeletons, mammals, plants, insects, crustaceans, shells, fossils, and fishes were also made.

Mr. W. W. Rockhill, whose past services in Thibet have resulted so favorably in behalf of the Museum, contemplates another journey to that region. Mr. Rockhill, in a letter dated June 3, writes as follows:

In compliance with your request that I would outline to you my proposed plan of exploration in Thibet, I have much pleasure in submitting the following brief outline of the work I am anxious to undertake.

Returning to the Koko-nor by the route I formerly followed (*i. e.*, Peking, Hsi-an-fu, Lan-chon-fu, Hsining) I would endeavor to go round Lake Koko-nor by the south and thus complete my study of the eastern Thibetan tribes. After that, the Ts'aidam Mongols, with whom I spent two months and over in 1889, would require to be studied more fully as to their social relations and language.

After this preliminary part of the journey I would go to a Thibetan tribe three days' march south of the source of the Yellow River, and claim the services promised to me to travel towards Lh'ara on my former journey. Should I not be able to thus reach that city, I have marked on the sketch maps I send herewith, two other routes, either of which I could follow with great profit to my special studies, and neither one of which presents insurmountable difficulties. Any one of the routes I propose following in Thibet will lead me through inhabited regions of special interest to ethnography. The degree of culture of the tribes inhabiting them is lower than in any other region of the country, save perhaps that between India and Thibet, but these tribes are probably not of the pure Thibetan stock.

Mr. Rockhill has continued his interest in making collections for the Museum. Among the contributions received from him is a map of Peking; a specimen of popular Chinese cartography, Chinese Buddhist book containing the Thibetan gospels, a fine collection of Chinese cloisonnés, enamels, lacquers, and bronzes, daggers and other weapons (deposited), and many ethnological objects relating to Chinese modes of living.

Dr. W. L. Abbott, of Philadelphia, Pa., has supplemented his previous collections by contributions of valuable material gathered in different parts of Africa, including a magnificent collection of weapons and personal ornaments of the Wa Chaga and Waisi negroes of the Kilima-Njaro region,* ethnological specimens from the Chagga tribes in the same locality, mammal skins and skulls, insects, specimens of woods, plants, fishes, crustaceans, birds, birds' eggs, birds' skeletons, fossils, and reptiles and batrachians, photographs taken in East Africa showing natives, scenery, habitations, and objects belonging to native life, from Madagascar, Kilima-Njaro and the Seychelles Islands.

Mr. Héli Chatelain, of Vineland, N. J., has collected, during his travels in Africa, a great variety of interesting objects. On his return to the United States last year, he added many valuable objects to the Museum collection. Among these may be mentioned a Sechnana Bible (Pentateuch) used by Dr. David Livingstone in his journey from the Cape of Good Hope to Loanda, West Africa. This book has Dr. Livingstone's autograph on the first page. The most extensive explora-

* A catalogue of this collection is published in Section III of this volume.

tions of Mr. Chatelain have been in western Africa, and from that region the Museum has received from him mammals, ethnological objects, coins, textiles and foods, rocks, shells, fossils, insects, marine objects, reptiles, birds' nests, a specimen of hair taken from the head of a McBamba negro, and many articles used in the daily life of the natives.

Capt. Frank Curling, of the *Joseph S. Spinney*, in a recent voyage, found a dugout adrift about 210 miles off the Pelew or Paloa Islands in the western Pacific Ocean. The boat contained 7 men, who had started from the Pelew Islands on a fishing cruise. They were overtaken by a storm and drifted out to sea, and were rescued by Capt. Curling. The dugout was forwarded to the Museum by Capt. S. A. Day, U. S. Army, Fort Mason, San Francisco, Cal., and attracts much attention.

Mr. R. M. Bartleman, of the United States Legation at Caracas, Venezuela, has continued his interest in the Museum. He has transmitted, as the results of his explorations, through Prof. O. T. Mason, some very interesting and valuable objects, among which are specimens of pottery from the Island of Gran Roque, stone implements, insects, shells, specimens of salt from the Salt Lakes of Cumana, a snake, gourds, and Cicada, used for medicinal purposes.

Mr. J. P. Iddings, of the U. S. Geological Survey, collected for the Museum on the island of Lipari, Mediterranean Sea, a volcanic bomb, and a specimen of basalt with inclusion of vitrified sandstone, found after the Etna eruption of 1886.

Mr. I. C. Russell, of the U. S. Geological Survey, has added to the collection, as a result of his recent explorations, faulted pebbles from Pinnacle Pass, Mt. St. Elias, Alaska; specimens of iron ore from Michigan and Alabama, coal from Vancouver Island, and ethnological objects from Alaska.

Lieut. Charles F. Pond, U. S. Navy, during his travels in Guatemala, collected and sent to the Museum specimens of grasshoppers and fire-flies.

Mr. P. L. Jony, of the Museum staff, while on an exploring trip in Arizona, collected for the Museum many valuable specimens of natural history. Mr. Jony is now in Mexico engaged in similar work.

The U. S. Fish Commission contributed to the Museum several new and valuable collections of fishes gathered by the steamer *Albatross* on the Pacific and by the schooner *Grampus* on the Atlantic coast.

Mr. Barton A. Bean, of the Museum staff, made a brief trip to Cape St. Charles, Virginia, for the purpose of collecting the fishes of that locality. He succeeded in obtaining several interesting specimens.

Rev. A. C. Goode, now traveling in Africa, has signified his intention to aid the Museum in the collection of ethnological material.

Hon. J. M. Crawford, consul-general at St. Petersburg, Russia, has

continued his work of collecting ethnological objects for the Museum. Writing under date of January 13, 1891, he says:

"I am getting on very nicely with the Finnish collection. In June I was all through Finland, and I even began the Arctic Circle in the Frigid Zone. I gathered considerable material, including curious old musical instruments, sacred Cantela, harp, weighing implements, hand-mill, bronze instruments, stone axes, copper plates (used for money), ancient jewelry, and an ancient Karelian costume of a peasant girl. Next summer I will make my shipment to the Smithsonian Institution."

COLLECTORS' OUTFITS.

During the fiscal year ending June 30, 1891, the following collecting outfits have been furnished by the Museum:

1890.

September 1.—Col. Cecil Clay, of the Department of Justice, obtained permission from the Commissioner of Crown Lands, Quebec Province, Canada, to procure specimens of moose and caribou for the National Museum. Col. Clay was supplied with a suitable outfit for this purpose.

November 12.—Mr. P. L. Jouy started on an exploring expedition in Arizona for the purpose of procuring natural history specimens for the Museum. He was supplied with a large outfit, including tanks, alcohol, jars, cloth, cans, ammunition, etc., to be used in collecting and preserving the specimens. The collections received from him are referred to in the accession list (Section V).

November 15.—Mr. R. M. Bartleman, of the United States Legation at Carácas, Venezuela, was supplied with an outfit, including a tank-box, alcoholic jars, etc. Several collections have been received from Mr. Bartleman, and reference is made to them in the accession list (Section V).

December 1.—Mr. H. W. Perry, of Chicago, Ill., was supplied with a quantity of ammunition, several tank boxes, and other material necessary for collecting specimens in Honduras.

1891.

Photographic outfits were lent to several Army and Navy officers, who were detailed for duty in foreign countries in connection with the World's Columbian Exposition. Among these were:

January 7.—Dalmeyer lens sent to Lieut. Baker, care of United States legation, Mexico City.

January 29.—Camera and film sent to Lieut. E. E. Sawyer, U. S. Navy.

Camera and film sent to Mr. W. P. Tisdell.

Camera and film sent to Lieut. George P. Scriven, U. S. Army.

April 10.—Dr. R. W. Shufeldt, U. S. Army, Takoma Park, D. C., was supplied with alcohol, tank-box, and other articles necessary to be used in collecting natural history specimens for the National Museum. Reference to his collections is made in the accession list (Section V).

May 11.—Mr. C. K. Worthen, of Warsaw, Ill., was furnished with material to be used in making a collection of bats and shrews for the National Museum.

Mr. A. G. Menocal, chief engineer of the Nicaraguan Canal Construction Company, at San Juan Del Norte, Nicaragua, has kindly consented to aid the Museum in its endeavor to secure collections of natural history from that country, and to enlist the aid of his assistants in this connection.

