

UNITED STATES NATIONAL MUSEUM,
UNDER DIRECTION OF THE SMITHSONIAN INSTITUTION,
Washington, July 1, 1898.

SIR: I have the honor to submit herewith a report upon the present condition of the United States National Museum, and upon the work accomplished in its various departments during the fiscal year ending June 30, 1898.

Very respectfully,

CHARLES D. WALCOTT,
Acting Assistant Secretary, in charge of U. S. National Museum.

MR. S. P. LANGLEY,
Secretary Smithsonian Institution.

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By EDWARD DRINKER COPE.

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PART I.

REPORT

UPON THE

CONDITION AND PROGRESS OF THE U. S. NATIONAL MUSEUM
DURING THE YEAR ENDING JUNE 30, 1898.

BY

CHARLES D. WALCOTT,

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

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GENERAL CONSIDERATIONS.

ORGANIZATION.¹

In the introduction to the Report for the fiscal year ending June 30, 1897, attention was called to a new plan of organization, which went into effect July 1, 1897, and the statement was made that the results of its operations would be considered in the Report for 1898.

The various divisions and sections of Anthropology, Biology, and Geology, which had previously been conducted independently of one another, the curators and custodians reporting directly to the Assistant Secretary in charge of the Museum, were united under three head curators, one of anthropology, another of biology, and a third of geology. This secured direct expert supervision and properly correlated the work of each department. Before, such correlation had been impossible, owing to the large number of independent heads of sections and divisions in each department, who planned and executed the work more or less independently of one another. The official correspondence was also more closely centralized in the executive office of the Museum.

Anthropology.—In the Department of Anthropology a large amount of work was done by Mr. W. H. Holmes in reorganizing and installing the exhibits, under a general scheme approved early in the year. The organization of the department, the personnel, and the details of the work will be found in his report. There are a number of sections that have not yet been assigned to any division, remaining for the present under the direct supervision of the head curator. Moreover, the classification of material and the division of work among the various members of the present staff, so far as it has progressed, is largely tentative, owing to the staff being composed of specialists in limited portions of the field of anthropology; this necessitates a somewhat arbitrary

¹ The organization of the staff is given in Appendix I.

classification and organization. As the various branches of the work develop, and increase is made in the number of curators, reclassification of material and readjustment of the force will gradually lead to a satisfactory and permanent organization.

The accessions to the department were numerous and valuable. Among those of more notable importance is a collection of antiquities and ethnological material, the bequest of the late Mr. W. Hallett Phillips, of Washington, to the Smithsonian Institution. This collection is not only of great extent, but of exceptional value to archaeological science. It contains 12,467 ancient relics, mainly stone implements from the Potomac region, and 106 ethnological specimens from Polynesia. By transfer from the Bureau of American Ethnology the Museum received material from Arizona, Arkansas, and Georgia; and by transfer from the Army Medical Museum, a collection of 2,206 human crania, representing mainly the Indian tribes, ancient and modern, of North America. There was received on deposit, and at the same time offered for sale, an extensive collection of stone implements and other ancient relics from various parts of Georgia, together with a collection of ethnological material from the Indians of the Great Plains and the Rocky Mountains, made by Emile Granier, of Paris. Valuable deposits were made by Prof. Alexander Graham Bell. These include a large number of pieces of apparatus made and used by him in his experiments and researches in various branches of electrical science. The General Electric Company also deposited many pieces of original apparatus connected with the early use of electricity for lighting, the transmission of power, and like purposes. Other valuable deposits are described in the report of the head curator.

During the year there were prepared by the curators and expert preparators of the department a number of models illustrating primitive life, processes, implements, utensils, etc.

The research work of the department during the year was extensive, the study, comparison, and classification of the collections before installation being essential to their intelligent utilization.

The system of installation inaugurated by Mr. Holmes is somewhat elaborate. The primary arrangement is founded, first, on the geographical or ethnographical assemblage, and, second, on the developmental or genetic assemblage. Other methods may be classed as special. They are the chronological, the comparative, the individual, etc. The primary methods are adapted to the presentation of the general truths of anthropology, and the special methods are available for limited portions of the field. A full description of the method of installation will be found in Mr. Holmes's report.

Biology.—The Department of Biology was embarrassed by reason of Dr. True's time being largely consumed in executive work, and it was not until late in the year that he secured an assistant curator to take charge of the work in the Division of Mammals.

In many ways the Department of Biology, when established at the beginning of the fiscal year, was in much better condition than either of the other two departments. The several zoological divisions already existing and the Division of Plants were brought together under a separate administrative head. As many of these divisions have been in existence since the reorganization of the Museum in 1881, and several of them for a much longer period, the organization of the department was a relatively simple matter. The biological specimens constitute the larger part of the Museum collections. They had been in charge of curators and assistants who followed the well-defined and long-established methods of systematic zoology and botany, and therefore no radical changes in the scientific methods or in the business administration of these divisions were required. The efforts of the head curator were largely in the direction of developing those features which, from various causes, had not had due prominence. He found the same difficulties met with by the other head curators in regard to laboratory and exhibition space and the force at his command. A large amount of the biological material is displayed in the Smithsonian building. The bringing together of all the invertebrates in this building was accomplished during the year, and this is a great gain in the classification of the exhibits. These collections include insects, mollusks, and all other classes of invertebrates. The display in Museum building includes the mammals, batrachians, reptiles, fishes, and the collections representing comparative anatomy. The birds remain in the Smithsonian building, it having been found impracticable to transfer this large exhibit to the Museum building.

The erection of galleries in the Museum building—a subject adverted to later—while not involving great changes in this department, as in the departments of Anthropology and Geology, rendered necessary the complete reinstallation of the large exhibition series of mammals. In the reinstallation Dr. True arranged the zoological exhibition on a faunal basis, special prominence being given to the faunas of the United States. This principal series is to be supplemented by various smaller series illustrating important topics in biology.

The additions to the zoological and botanical collections were numerous, and in some directions unusually important. The generous donation of Messrs. Hubbard and Schwarz of their collection of Coleoptera, principally North American, comprising about 200,000 specimens and representing approximately 12,000 species, is of great importance, as it places the National Museum in advance of all others as regards North American Coleoptera. Dr. W. L. Abbott continued his liberal gifts to the Museum by presenting large collections of birds, mammals, reptiles, insects, and other animals from lower Siam and Kashmir; and Dr. W. L. Ralph supplemented his valuable additions to the collections of birds' eggs. The largest acquisition to the mollusks consisted in the gift by Dr. R. Ellsworth Call of a collection including over 86,000 specimens.

Great activity prevailed during the year in the Division of Plants. Accessions to the number of 307 were made, including the purchase of all of the most valuable sets of American plants offered for sale that were needed to fill out the Government collections. This division is more fortunate than others in the Museum, having funds from which such purchases can be made.

The scientific bureaus of the Government, including the Fish Commission and the Biological Survey of the Department of Agriculture, continued to make very valuable additions to the national biological collections. A full description of these, and also of numerous additions from individuals, is given in the report of the head curator of the department, where also will be found the changes in the personnel and an account of the work for the year.

Geology.—In the Department of Geology Dr. Merrill gave a large portion of his time during the year to studying various European museums for the purpose of obtaining information as to the best cases and methods of installation of collections in museums. In addition to the head curator's absence, nearly all work was suspended in the exhibition halls during the construction of the new galleries and exhibition cases, so that little progress was made in the exhibition series during the first half of the year. Dr. Merrill resumed active charge of the department early in November, when he began a systematic examination of the written and printed records of the various exploring expeditions and surveys, with a view to ascertaining what geological material had been collected which could properly be considered the property of the Government, and what disposition had been made of the same. The law provides that collections made for the Government shall, when no longer needed for investigations in progress, be deposited in the National Museum.¹ It was found that this law had not in all cases been enforced, with the result that several important collections had not been transferred to the Museum, although several of the earlier exploring expeditions had passed out of existence, and in several instances the individuals making the collections had likewise passed away. It was decided to investigate all such cases. A fine collection of fossil fishes, made by the Hayden Survey, was obtained from the executors of Professor Cope's estate, and some other material is soon to be transferred by them. A request was made to the Geological Survey for any material that could be transferred without detriment to investigations in progress, assurance being given that the Museum could take charge of extensive collections. The Survey soon transferred a large

¹“And all collections of rocks, minerals, soils, fossils, and objects of natural history, archaeology, and ethnology, made by the Coast and Interior Survey, the Geological Survey, or by any other parties for the Government of the United States, when no longer needed for investigations in progress shall be deposited in the National Museum.” (Supplement to the Revised Statutes of the United States, Vol. I, second edition, 1874-1891, page 252.)

amount of good material, including in one instance two carloads of vertebrate fossils from the laboratories of Prof. O. C. Marsh, in New Haven, Connecticut.

The collection of fossil invertebrates was greatly enriched by two most important gifts. Through the bequest of the late I. H. Harris, of Ohio, the Museum came into possession of his private collection of over 20,000 specimens of fossils; this is particularly rich in many rare forms and a number of original types. From Mr. R. D. Lacey, of Pittston, Pennsylvania, to whom the Museum was already so largely indebted, there was received a large collection of fossil insects, comprising upward of 4,600 specimens, of which more than 200 are types. Other valuable accessions are mentioned in the report of the head curator.

In the Division of Mineralogy satisfactory progress was made in the installation of the exhibition series. An immense amount of detail work in overhauling and classifying collections stored in boxes and drawers was accomplished. Owing to the pressure of other matters and the unsatisfactory condition of the exhibition halls, scarcely any investigations of note were undertaken by the curators.

GALLERIES.

The erection of the galleries in three of the halls and the four courts of the Museum building, under the acts of Congress approved June 11, 1896, and June 4, 1897, was completed during the year, with the exception of the permanent railings. This increased the available floor space of the Museum 17,000 square feet, or about one-sixth of the former exhibition space. The various wall exhibits that formerly extended to a greater height than the base of the galleries were removed early in the year, and after the galleries were completed many cases containing exhibits were placed on them. In addition to the galleries already completed, it was decided to construct other galleries affording a further floor space of 6,468 square feet, mainly for the purpose of securing more room for the library and for the preparation of exhibits.

ACCESSIONS.

During the fiscal year there were 1,441 accessions, containing upward of 450,000 specimens, the largest number for any one year during the past decade. The total number of specimens recorded to July 1, 1898, exceeds 4,000,000.

ATTENDANCE.

Owing probably to the national disturbance and distraction caused by the war, the attendance was less than during the previous year, when the multitude attending the Presidential inauguration ran the record unusually high. The following table shows that the number of visitors to the Museum since 1881 is 3,972,987.

Year.	Museum.	Smithsonian.
1881-1895.....	3,385,622	1,680,254
1895-96.....	180,505	103,650
1896-97.....	229,606	115,709
1897-98.....	177,254	99,273
Total.....	3,972,987	1,998,886

ADMINISTRATION.

The administrative work of the Museum was conducted most efficiently during the year, mainly by Dr. F. W. True, as executive curator, and for short intervals by Dr. G. P. Merrill and Mr. W. H. Holmes, respectively. Mr. J. L. Willige was acting chief clerk during the absence of Mr. Cox in connection with the Nashville and Omaha expositions. As chief of buildings and superintendence, Mr. J. E. Watkins took charge of the erection of the new galleries, and much of the success attending their construction is due to his careful supervision.

In conclusion, it is a pleasure to me to state that commendation is due the head curators and their assistants for the energy and patience they have shown and for their willingness to subordinate individual desires and preferences to the general welfare of the work of the Museum. It is owing to this *esprit de corps* that the work of the Museum progressed so satisfactorily during the year.

CONDITIONS AND NEEDS.

A national museum should be the center of scientific activity in the country in which it is located. In England the British Museum is the mecca of scientific men. The national museums in Paris, Copenhagen, Vienna, Berlin, and other capitals of Europe stand in similar relations to the scientific work of their respective countries. Such a relation the National Museum should hold to scientific men and affairs in America. It should receive and take care of all classes of material which have been or may be valuable for investigation or for the illustration of the ethnology, natural history, geology, products, and resources of our own country or for comparison with those of other countries. It should furnish material for all kinds of scientific investigations which deal with specimens or types, and give aid to such researches and publish their results. It should present by illustration such of the results of the scientific investigations of its corps of officers as are susceptible of such representation. It should cooperate with all of the higher educational institutions of learning in the country, and assist in the promotion and diffusion of knowledge in all of the lines of investigation which are carried on by them. It should provide library facilities, and, as far as can be done with justice to itself, aid all post-graduate students who may wish to take advantage of the generous provisions made by the Government for scientific investigations.

SPACE.

The growth of the U. S. National Museum was rapid under the successful charge of the late Dr. G. Brown Goode. When the character of the building and the funds available for its maintenance are considered, it compares favorably with any modern museum. It has received large collections from the scientific departments of the Government, and through private contribution (with some additions by purchase and exchange), all of which have been accommodated as well as could be in the inadequate laboratories, storerooms, and exhibition space. The galleries just completed have added 16,000 square feet of floor space, which will help to a certain extent to relieve the crowded condition of the exhibition halls and courts below. As an illustration of the present conditions and the necessity for more room, attention is called to the anthropological collections, which illustrate the development and progress of man and his works. If the material now in the possession of the Government in this department should be properly placed on exhibition, it would occupy the entire space in the present Museum building. The great collections in zoology, botany, economic geology, general geology, and paleontology should be entirely removed and placed in a building properly constructed for their study and exhibition.

Laboratory space.—In the present building there is a great deficiency in laboratory facilities. Curators and assistants are hampered for want of room in which to lay out, arrange, classify, mount, and label specimens. There should also be rooms in which students could bring together and compare various series of objects, and have at hand books and scientific apparatus. The present Museum building contains a few rooms suitable for the purposes mentioned, but the majority have to be used as storerooms, laboratories, and offices, and are therefore too much crowded to serve in any one of these capacities. Owing to the pressure for space, courts, halls, and galleries intended for exhibition purposes, both in the Smithsonian building and in the Museum building, are unavoidably occupied to a considerable extent as laboratories and storerooms. This lack of laboratory space is extremely detrimental to the interests of the Museum.

Quarters for storage.—Beyond six small basement rooms under two of the corner pavilions the present building has absolutely no provision in the way of basement or other rooms for the storage of collections which come in from day to day from Government field collectors or private donors, or such as are separated for distribution or held for the use of students. To remedy this defect many expedients have necessarily been resorted to, such as placing storage cases (faced with mahogany to make them presentable) in the exhibition halls, hiring storage rooms in private buildings, and filling up offices, entrances, staircase-landings, and passageways not absolutely indispensable. The ingenuity which has been exercised in this direction by some of the curators is very great and the annoyances that are daily endured in the interest of preserving the collections deserve notice. What is

needed is a series of spacious fireproof basements for the less perishable objects, the collections preserved in alcohol, and the ordinary stores and tools, and equally spacious dry lofts and rooms for those collections and stores which require protection from dampness.

Exhibition space.—The present Museum building, though large in extent, is overcrowded. It was built with the cheapest materials and under the cheapest system of construction. Its lack of architectural dignity and the indifferent character of the materials of which it is constructed give it the appearance of a temporary structure and tend to cheapen the effect of the really good cases and the very valuable collections which it contains. The visitor is everywhere confronted with rough walls, unfinished ceilings, and obtrusive trusses and supports. It should also be remembered that a considerable portion of the collections are still in the Smithsonian building, where the crowding is scarcely less than in the Museum building.

INCREASE IN THE SCIENTIFIC STAFF.

The head curators, curators, assistant curators, and aids, constituting the scientific staff of the National Museum, number in all 63 persons, divided among sixteen divisions. Of these, 26 are compensated for their services and the remainder serve gratuitously, being for the most part connected with other bureaus of the Government. The system of honorary curatorship, while admirable within restricted limits, is a disadvantage when carried to the present extent. Such a system has a disintegrating effect upon the organization, as the men are not entirely at the command of the administrative officers and are not obliged to serve at definite hours or under the ordinary restrictions of the paid curators. The number of honorary officers should be reduced by the substitution of a larger number of salaried officers.

The total number of scientific assistants should be very considerably increased, as nearly all of the divisions are short-handed and many of the collections do not receive the care they should have. At present there are not enough assistants who can serve as acting officers in a higher grade when the regular occupants of those offices are ill or necessarily detailed for service outside of Washington. Moreover, a museum can not be successfully carried on with intermittent service, and it is extremely desirable that there should always be a considerable number of young men learning the duties of scientific assistants, and thus making themselves capable of taking the places of the older men when the latter become incapacitated. There are now only four or five such young men in the Museum service.

PURCHASING AND COLLECTING FUND.

The National Museum has at present no regular fund for the acquisition of collections and special objects, and can only make purchases from a contingent fund which rarely exceeds \$3,000 or \$4,000, and which is likely at any time to be required for other necessary expenditures. For this reason, every year valuable collections which should be in the

hands of the Government, go abroad or to municipal museums or pass into the hands of private citizens. Money is also needed to fill out and make significant the various series already established in the Museum. The American Museum of Natural History in New York expends annually \$60,000 for the increase of its collections, and the Field Columbian Museum in Chicago has spent for collections during the last five years over \$419,000. Much of this was expended the first year, but material is purchased from time to time as it is needed to make collections more nearly complete.

No effort on any scale commensurate with the importance of the Museum has hitherto been possible in the direction of acquiring collections by field work and exploration. There are many kinds of collections that can be obtained only by scientific men working in the field. Collecting expeditions are often costly, but in many cases their results are such as can be obtained in no other way. There is no doubt whatever that it would be a very great advantage to the National Museum if it could every year, besides purchasing a reasonable amount of material, send out collectors to various regions to obtain objects which are never offered for sale, and which, if gathered by unskilled collectors, would lose all their value.

The experience of many years has shown that however active surveying and exploring expeditions may be, collections can not thus be made to grow symmetrically. There are always gaps which can be filled only by purchase of materials. It is often necessary, for purposes of comparison and for study, that the Museum obtain collections from abroad, and such as can be had also only by purchase or exchange. This fact is well recognized abroad, and the British museums and some of those on the Continent contain rarer and better specimens from America than do the American museums.

DISTRIBUTION OF SPECIMENS.

It is well known that the Museum distributes great quantities of duplicate specimens. This is a very important work and could be much extended if the scientific staff were larger. The work of bringing together, identifying, labeling, and preparing for shipment sets of specimens for educational institutions is very considerable, and consumes so much time that it can not be properly entered upon by the present force.

A NEW MUSEUM BUILDING.

The immediate and greatest need is a suitable museum building. The present building is 375 feet square. The space on the ground floor is 140,625 square feet, and that in the galleries 16,000 square feet; exhibition space 96,000 square feet. The entire cost was \$315,400.

For comparison with the above figures the following statistics relating to the American Museum of Natural History in New York are given. Total floor space, 294,000 square feet, divided as follows: Exhibition space, 196,000 square feet; laboratories, library, etc., 42,500

square feet; work rooms, storage, etc., 42,000 square feet; lecture hall, 13,500 square feet. These figures include the portions of the building now being completed. The total cost of the museum to date, including the completion of the new wings, is \$3,559,470.15. The buildings and the care of them are provided for by the city of New York. The expenses of the scientific staff, increase of collections, etc. (the income for which the present year is approximately \$185,000), are defrayed from endowments, membership fees, and contributions.

The present National Museum building was erected with the view of covering the largest amount of space with the least outlay of money. In this respect it may be considered a success. It is, in fact, scarcely more than the shadow of such a massive, dignified, and well-finished building as should be the home of the great national collections. There is needed at once a spacious, absolutely fire-proof building of several stories, constructed of durable materials, well lighted, modern in equipment, and on such a plan that it can be added to as occasion demands in the future. A site for such a building is already owned by the Government; only the building needs to be provided for. What the Capitol building is to the nation, the Library building to the National Library, the Smithsonian building to the Smithsonian Institution, the new museum building should be to the National Museum.

Exhibition and laboratory space.—If the present building were devoted to the Department of Anthropology, in the new building there should be provided fully 115,000 square feet of exhibition space for the Department of Biology, and for its laboratory and office rooms 75,000 square feet, making a total of 190,000 square feet. The space mentioned is based upon careful estimates of what will be needed for the proper housing of and work on the collections now in hand and that will probably come to the Museum within the present generation. It would be provisionally assigned among the different divisions of the department as follows:

Space needed by the Department of Biology.

Division.	Exhibition space.	Laboratory and office space.	Grand total.
	<i>Sq. feet.</i>	<i>Sq. feet.</i>	<i>Sq. feet.</i>
Mammals	23, 500	14, 000	37, 500
Birds and birds' eggs	12, 000	7, 600	19, 600
Reptiles and batrachians	4, 500	3, 600	8, 100
Fishes	8, 000	8, 300	16, 300
Mollusks	4, 200	8, 000	12, 200
Insects	3, 500	7, 000	10, 500
Other invertebrates	10, 000	10, 500	20, 500
Comparative anatomy	5, 000	3, 500	8, 500
Herbarium	20, 000	12, 500	32, 500
A ' Cetaceum,' or special hall for whales	2, 500	2, 500
Special series:			
Synoptic series, protective coloration, mimicry, albinism, melanism, etc	22, 000	22, 000
Total	115, 200	75, 000	190, 200

It is estimated that 65,000 square feet of exhibition space will be needed in the Department of Geology and 18,000 square feet for its offices and laboratories.

In addition to the laboratories for biology and geology there should also be provided 5,000 square feet of laboratory space for the use of post-graduate and special students who come to Washington to avail themselves of the exceptional opportunities for study offered by the materials brought together in the National Museum and by the investigations carried on in the various scientific bureaus.

There will also be needed a considerable portion of the basement of a building for rough storage, preparators' shops, taxidermists' rooms, etc.

Lecture hall.—The need of a suitable lecture hall is imperative. The lecture hall of the American Museum of Natural History has 13,500 square feet of floor space and that of the Field Columbian Museum 4,250 square feet. A suitable hall for the National Museum should include at least 6,000 square feet, and there should also be one or two smaller rooms that could be used for lectures on special topics, when a small audience only is expected.

Summary of space needed by the National Museum.

	Square feet.
Department of Biology	190, 000
Department of Geology	83, 000
Special laboratories for students	5, 000
Rough storage, workshops, etc.	20, 000
Lecture hall	6, 000
	<hr/>
	304, 000
Present Museum space, to be devoted to the Department of Anthropology ..	96, 000
	<hr/>
Total	400, 000

The American Museum of Natural History, which has 294,000 square feet of space, has so planned its buildings that additions can be made to them as rapidly as funds are available and the increase of the collections demand the space. Less than one-fourth of the structure as originally planned is completed.

FUTURE DEVELOPMENT OF THE NATIONAL MUSEUM.

With suitable buildings provided, the immediate development of the National Museum naturally lies in three directions. First, the occupation of the present building by the anthropological collections; second, the housing, developing, and installing of the great biological collections, and third, the development of a great museum of practical geology.

First.—The collections in anthropology, as they stand to-day, cover a wide field in a broken and disconnected way. It is difficult to use them effectually to illustrate the great features of this branch of science. They do not present a connected story of the peoples and cultures of the world. This arises from the gaps in the collections and the absence of suitable laboratory and exhibition space. This depart-

ment should have adequate representations of the American peoples and their culture, not only of our own country, but of the whole American continent. Our nation is the only one in America that can reasonably be expected to do anything of importance toward the preservation of the materials necessary for the illustration of this vast field, and as the American race is a unit, of which the tribes in our own territory constitute but a fragment, it appears to be our duty to take up this work in a comprehensive way. Thus would be built up not only a national museum but an American museum in the widest sense. This applies not only to anthropology but to the other great departments of the Museum. It will be impossible to carry on such a work without turning over to the Department of Anthropology the entire present building, with all of its laboratory and exhibition space.

Second.—The Department of Biology now occupies a large exhibition space in the Smithsonian building and 55,000 square feet in the National Museum building. Large collections, which would be placed on exhibition if space were available, are stored in laboratories and inclosed spaces in the exhibition halls. As has already been explained, in a new building there should be available for the Department of Biology 190,000 square feet of exhibition, laboratory, and storage space.

The present exhibit is more complete than that of the other departments of the Museum. Of birds there is a large mounted series, one of the finest in existence, but it is so indifferently housed that it fails to make the impression it should. Of mammals there is a good North American series and some excellent examples of exotic species. There is a good and rather large exhibit of the various groups of the lower forms of animals, including an especially fine series of corals and sponges.

These are the only series at present exhibited which can be considered at all comprehensive. Of the great groups of fishes, reptiles, and amphibians there is room only for an outline representation. The wonderful variety of form among insects can be scarcely more than suggested in the space available. Of plants there has hitherto been no exhibit worthy of the name, and the space which it has now been possible to set aside is entirely out of proportion to the vast extent and importance of this great kingdom of nature.

Every natural-history museum of the first class should have at least two comprehensive exhibition series—first, the *Systematic Series*, representing the natural groups among which all animals and plants, from the highest to the lowest, are divided; second, the *Faunal and Floral Series*, showing the animals and plants characteristic of each of the grand divisions of the earth's surface which naturalists have established as a result of their studies of these two kingdoms of nature.

These two great comprehensive exhibits should be supplemented by a number of *Special Series*, illustrating the more interesting phenomena and phases of life, such as the macroscopic and microscopic structure of

animals and plants and their development from the germ to the fully adult individual, and special modifications of form and color by which animals are protected from their enemies, the adaptations for peculiar environments and modes of life, the characteristics of youth, maturity, and old age, the variation in form, size, and color among individuals of the same species, the domiciles and other works constructed by birds, mammals, insects, and the like.

To these series should be added another of great importance, the *Economic Series*, representing the animals and plants as related to the activities and needs of man.

Any one of these principal series in its full development would more than fill the entire space now available.

Third.—There should be developed a museum of practical geology in the broadest sense, which will be of service to every producer and consumer of American mineral products, and to all students of geology who are engaged in either economic or purely scientific investigations.

In addition to the series of rocks and fossils illustrating the stratigraphy and succession of the sedimentary rocks and the systematic collection of minerals and ores, an exhibit showing how geologic work benefits the daily life of the people should be developed. An illustration of this would be a representation of the artesian water supply of the semiarid region, showing the stratification and structure of the sedimentary rocks, and how hydrographic and geological investigations clearly indicate the regions in which artesian water development may be carried on successfully. Mining and areal geology could also be illustrated in such manner as to place before the student and intelligent observer the import and value of such work.

In most museums the principal effort has been to make a collection of useful mineral products. This is desirable, but from a broad view of illustrating the practical in addition to the scientific side of geology it should be secondary. The best basis for classification on the practical side of the museum exhibit appears to be the finished mineral product. For instance, if pig iron be taken as a key material in classification, the iron ores from which it has been obtained should be arranged so as to show the various kinds whose combination has resulted in the final result as pig iron. In connection with this should be grouped the geological phenomena, which should include representations of any geological conditions connected with the original deposition and the occurrence of iron ores. This might include the conditions which have led to the oxidation of pyrite and other sulphur compounds of iron, and to the development of hydrous oxides of iron; also an illustration of what has been demonstrated in regard to the solution of widely distributed minerals in certain rocks and their subsequent concentration in ore bodies by metasomatic action. All of the metals could be arranged under such a classification, as also the nonmetallic products. To prepare such an exhibit would require many years of work, the details of which would be considered as each mineral product was taken in hand.

Some of the preceding suggestions have been adopted by the Museum authorities and partially put into execution, and the carrying of them out is dependent upon enlarged facilities for laboratory work and exhibition space. During the administration of Dr. Goode, the Museum developed as far as possible under the conditions surrounding it. No one knew better than he that only by securing new buildings and expanding the Museum could it take the place in America that the several national museums of Europe had taken in their respective countries. It is well recognized that a public museum is a necessity in every highly civilized community, and that, as has been so well stated by Dr. Goode, "the degree of civilization which any nation, city, or province has attained is best shown by the character of its public museums and the liberality with which they are maintained." At present New York City is, in this respect, in advance of all other American cities and of the National Government. Whether the latter will take its proper place by developing the National Museum as it has developed the National Library remains to be seen. The question whether they are willing to be represented by the Museum as it is to-day is before the American people.

REPORTS OF HEAD CURATORS.

- REPORT ON THE DEPARTMENT OF ANTHROPOLOGY By WILLIAM H. HOLMES.
REPORT ON THE DEPARTMENT OF BIOLOGY..... By FREDERICK W. TRUE.
REPORT ON THE DEPARTMENT OF GEOLOGY By GEORGE P. MERRILL.
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REPORT ON THE DEPARTMENT OF ANTHROPOLOGY FOR THE YEAR 1897-98.

By WILLIAM H. HOLMES,
Head Curator.

It is convenient to present the matter of the present report under the following heads:

- I. General administrative work.
- II. Acquirement of Museum materials.
- III. Preservation of collections.
- IV. Classification and research.
- V. Installation.
- VI. The Anthropological exhibit at the Trans-Mississippi and International Exposition.

GENERAL ADMINISTRATIVE WORK.

A partial reorganization of the Museum made at the beginning of the year resulted in the formation of three departments, one of which is Anthropology. The various divisions and sections dealing with man and his works, which have been conducted independently of one another, the curators and custodians reporting directly to the Assistant Secretary in charge of the Museum, are now united under a head curator of anthropology. This operates to give direct expert supervision of all the divisions and properly correlates the various branches of a complex work. The head curator took charge October 1, 1897, and a number of changes were made in the scientific staff of the department and in the limitations of the fields occupied by the various curators and custodians. The present organization is indicated in Appendix I.

There are a number of sections included in the department not yet assigned to any one of the above divisions, and these remain for the present under the direct supervision of the head curator. The present classification of the material and the assignment of the staff are by no means final. It was found impossible to devise a scheme that would satisfy the requirements of scientific classification and at the same time accommodate itself to the acquirements of the present staff, which is composed of persons devoted each to special portions of the field of anthropology. It is expected that as the various branches of the work become fully developed and the collections are enriched and rounded out so that a systematic treatment of the whole field is possible, the questions of reclassification and rearrangement of the force will gradually adjust themselves.

The clerical and other nonscientific work of the department has been conducted as in preceding years, save that some changes in routine, intended to facilitate the transaction of business, have been introduced. Official correspondence is carried on almost wholly through the Museum Office of Correspondence and the executive officer of the Museum. The records are thus less scattered and more generally accessible than if in the hands of many individuals. The work of receiving, recording, marking, and placing accessions is well provided for in the official routine, and the necessary poisoning of specimens, repairs, making of replicas and models, the building of group exhibits, etc., are in the hands of expert preparators.

During the year two notable episodes have diversified the work of the department, viz, the building of galleries, and the preparation of exhibits for the Trans-Mississippi Exposition held in Omaha. Iron galleries were constructed in four of the seven anthropological halls and this has not only seriously interfered with the progress of installation, throwing the halls affected into confusion for several months, but has made it necessary to reinstall the major part of the exhibits in all the halls. From year to year the spaces have become gradually overcrowded with exhibits, and the opening of the galleries afforded the opportunity of relieving the congestion in part. The first step in this reassemblage of collections was the selection of furniture to accord with the spaces and the collections, and the head curator has devoted much time to the utilization of the various styles of cases to the best advantage. Necessary alterations and repairs were made in cases, pedestals, screens, etc., as the work progressed. In reassembling the furniture, much attention was given to the opening of thoroughfares, the widening of spaces, and in systematizing and simplifying the installation. The work on the main floor is now well advanced, but, in the galleries where wall cases are in process of construction and in halls where floors are being laid, it remains far from complete.

For a period of three months, ending with June 1, the energies of the department were largely devoted to the preparation of an exhibit for the Trans-Mississippi Exposition, a detailed account of which is given in another place.

ACQUIREMENT OF MUSEUM MATERIALS.

A primary function of the department is the acquirement of Museum materials. These materials include specimens and the data relating to them. Specimens consist of the actual objects, derived from every part of the anthropological field, and of models and casts, as well as of photographs and other representations of the actual objects. The channels through which they are acquired are (1) gift; (2) transfer (from the Smithsonian Institution and departments of the Government); (3) purchase; (4) collection; (5) exchange, and (6) manufacture. To these materials are added deposit or loan collections, the treatment of

which is identical with that of bona fide acquisitions. The administration of the function of acquisition in the department is uniform with that of other departments.

Gifts.—The accessions for the year have been numerous and valuable, and details relating to them will be found in another place. Among the gifts are some of notable importance. A collection of antiquities and ethnological material, the bequest of the late W. Hallett Phillips, of Washington, is not only of great extent but of exceptional value to archaeological science, having been collected and recorded with care by Mr. Phillips, who was a conscientious and discriminating devotee of archaeological research. The collection contains 12,467 ancient relics, mainly stone implements from the Potomac region, and 106 ethnological specimens from Polynesia. The latter material was collected by Mr. Henry Adams, of Washington, during a prolonged voyage among the Pacific islands.

Transfers.—The Smithsonian Institution, through the agency of its Bureau of American Ethnology, has acquired by purchase and transferred to the Museum two collections of importance—a valuable series of ancient stone and earthenware utensils from graves and mounds in Arkansas, and a collection of antiquities from mounds of the well-known Etowah group of Georgia, made by Dr. Roland Steiner, of Grovetown, Georgia. The latter lot, together with the material previously obtained from the same locality by agents of the Bureau of Ethnology, forms one of the most instructive assemblages of archaeological material ever brought together from the mound region.

A noteworthy accession of the year is a collection of 2,206 human crania transferred to the Museum from the Army Medical Museum, through the courtesy of Surgeon-General G. M. Sternberg. This collection has been accumulating for many years and represents mainly the Indian tribes, ancient and modern, of North America. Much of the material was acquired through National Museum agencies and was turned over to the Medical Museum for the benefit of the corps of students of physical anthropology connected with that institution. It includes only nonpathologic remains and is to form the nucleus of a division of physical anthropology in the Anthropological Department.

Deposits.—Of the various collections loaned to the Museum during the year, and at the same time offered for sale, two are of more than usual importance. (1) A very extensive series of stone implements and other ancient relics from various parts of Georgia, owned by Dr. Roland Steiner, and (2) a collection of ethnological material from the Great Plains and Rocky Mountain Indian tribes, made by Emile Granier, of Paris. It is expected that these collections will be acquired by the Museum at an early date. Other loan collections worthy of note are (1) a series of personal mementos of Gen. W. S. Hancock, deposited by Cadet G. R. Hancock, of West Point Military Academy, and a number of important Jewish religious ceremonial objects deposited by Mr.

H. E. Benguiat. A valuable collection of Japanese porcelains, loaned by Miss E. R. Scidmore, is now installed in the Gallery of Ceramics.

The Section of Electricity, Division of Mechanical Technology, has been especially fortunate in acquiring material, and the following statement of Mr. G. C. Maynard, custodian of the Section of Electricity, is quoted from the report of Mr. J. E. Watkins, curator.

One of the most important accessions received during the year is an extensive collection of apparatus deposited by Prof. Alexander Graham Bell. This deposit embraces a large number of pieces of apparatus made and used by Professor Bell in his experiments and researches in various branches of electrical science. The invention and development of the speaking telephone, from the first crude experimental device to the most perfect instrument now in use, is clearly illustrated by a series of objects showing the various advancing steps by which the new art of telephony was created.

Another interesting portion of the collection is the apparatus devised and used by Mr. Bell in his photophonic experiments, including the original instrument with which, on the 2d of June, 1880, he successfully transmitted articulate speech by means of a beam of light from the roof of the Franklin School building, in Washington, to his laboratory on L street, a distance of 213 meters. Mr. Bell contributed his original induction balance apparatus, including that devised by him for the purpose of locating the bullet in the body of the late President Garfield, and similar apparatus of later dates. In addition to the above the accession includes Bell's multiplex telegraph instruments, his induction balance audiometer, for testing hearing, and an Edison phonograph of the earliest pattern, in which the sound waves are recorded on a sheet of tin foil.

The deposits made by the General Electric Company are of much interest and value. Among the historical objects are the first Thomson-Houston three-coil, arc-light dynamo, made in 1879, which formed the basis of the Thomson-Houston electric lighting system, the first automatic regulator used with this machine, a dynamo and electric motor used in the Thomson-Houston factory at New Britain in 1880-1881, the first electric welding machine made by Thomson, and many other pieces of original apparatus connected with the early use of electricity for lighting, the transmission of power, and other purposes. Another contribution from the same company is one of the first incandescent electric-lighting dynamos, made and put in operation by Edison in 1879, on board the steamship *Columbia*, of the Oregon Steamship Navigation Company, which was the first steamboat equipped with incandescent electric lights. This dynamo was continued in active use for a period of nearly twenty years, and is still serviceable. Especial interest attaches to this machine for the reason that it is one of the first lot of four dynamos made in this country for commercial incandescent electric lighting. One of the others formed part of the equipment of the polar exploring vessel *Jeanette*, commanded by Captain De Long, on its cruise into the Arctic Sea, where it was lost in 1882. Contributions of a series of historical incandescent lamps and specimens of insulated conductors have also been received from the General Electric Company.

The Coe Brass Manufacturing Company, of Ansonia, Connecticut, through its president, Mr. George F. Brooker, presented to the Museum ten dynamos made between the years 1873 and 1879, by William Wallace, for the generation of electricity for electric lighting, electroplating, and other purposes. Some of these machines were in practical operation during the Centennial Exposition at Philadelphia, and are said to be the first arc-light dynamos used for public lighting in this country.

An electric generator of still earlier date than any of those referred to was made by Charles A. Seeley in 1867. In regard to this machine it is said that early in the year 1867, when the principle of self-excitation in dynamos was new, and in fact

practically unknown except to a few of the most advanced electricians in this country, the subject of electric lighting was broached by Professor Seeley to Mr. Horace Greeley. Mr. Greeley became deeply interested and highly amused at the idea of grinding out electricity with a crank and then making light of it, as he expressed his understanding of Professor Seeley's description of an arc light operated by a dynamo. Mr. Greeley suggested that Seeley should build a dynamo and other apparatus, which were accordingly started at once. The satisfactory results of the experiment led to the publication of an editorial in Mr. Greeley's paper, the *New York Tribune*, on March 28, 1867, which foreshadowed the success that has since been attained in the art of electric lighting. The Seeley dynamo and the original electric motor and railway devised in 1834 by Thomas Davenport, who was the first inventor of a method of applying galvanism to produce rotary motion, were received as a deposit from the American Institute of Electrical Engineers through Ralph W. Pope, the secretary of the organization.

The dynamos added to the section during the year represent almost the entire range of American inventions which form the basis of the practical methods of electric lighting, both by arc and incandescent lamps, and mark an important epoch in the history of artificial illumination. Duplicates of few, if any, of these machines are in existence.

A Morse telegraph register, presented to the Smithsonian Institution by Prof. Henry Ortmann, of Baltimore, by direction of the late Rev. Henry Schieb, appears to be of especial interest. The instrument was in the possession of Mr. Schieb for many years, and is said to have been used on a private telegraph line operated by him and Professor Morse prior to the building of the public line between Washington and Baltimore in 1844.

Mr. Edward L. Morse has during the year deposited several instruments and documents relating to his father's telegraphic inventions.

There have been added to the Henry collection a number of experimental electrical instruments found by Miss Mary A. Henry in the possession of Miss Annie Wrightsen, of Albany, from whom the apparatus was purchased.

Results of exploration.—Explorations begun during the preceding year, under the auspices of the Bureau of American Ethnology, have yielded material of great value. Excavations conducted by Dr. J. Walter Fewkes, near Tucson, Arizona, have resulted in the acquisition of some 1,300 specimens of pottery and other classes of relics, and Mr. J. B. Hatcher, collecting for the Bureau of Ethnology, has forwarded a number of unique ethnological specimens from Patagonia. Explorations undertaken in Brown County, Ohio, by Mr. Gerard Fowke, also for the Bureau, yielded a limited collection of relics from stone-grave burials of the mound builders.

Exchange.—The exchanges have not been important, although collections of considerable value have been acquired, as follows: (1) Various ethnological and archaeological objects from South America in exchange for pueblo collections with the Field Columbian Museum, of Chicago. (2) A series of flint nodules, flaked flints, and flint working tools from the gun-flint factories of Brandon, England, in exchange for chert quarry refuse from Indian Territory.

Manufacture.—The department relies for many of its most interesting and instructive exhibits upon the skill of its curators and expert preparators. During the year a number of models have been prepared illustrating primitive life, processes, implements, utensils, etc., and

numerous reproductions of objects of interest, in plaster, have been made.

Notwithstanding the large number of accessions and their undoubted value, it should be noted that the results of the year's collection are not wholly satisfactory. The meagerness of funds for purchase has made it impossible to secure some of the most important collections offered, and as no provision is made for exploration and systematic expert collection, it is found that, save for the occasional well-ordered collections donated or transferred, the acquisitions are fragmentary and lack the detailed data so essential to the student engaged in research.

PRESERVATION OF COLLECTIONS.

Following the acquisition of museum materials are various steps looking to their preservation. The collections for the year have been accessioned, recorded, and marked as usual, and have been stored or placed in the study or exhibition series by the curators. The department suffers much inconvenience from lack of space and facilities for handling the collections. Instead of a well-ordered laboratory in which to open, spread out, examine, compare, and classify specimens as they arrive or as subsequent research goes on, small portions of the exhibition halls have been screened off for the purpose, thus interfering with installation, and often rendering hasty removals and premature storage necessary. At the close of the year one entire gallery is devoted to laboratory uses and is thus necessarily closed to the public. I regard the lack of laboratory space as extremely detrimental to the interests of the department.

A large part of the ethnological collections require expert attention on their arrival in the Museum. They are unclean and infested with destructive insects, and experienced preparators are required for cleaning and preserving. The latter work is carried on in a small shop in an outbuilding. This is very inconvenient and requires the removal of the collections to be treated from the Museum building to one which is by no means a safe repository for valuable specimens.

The question of storage of material has arisen many times during the year, and numerous collections have been removed to storage. The exhibition halls, although much less crowded than at the beginning of the year, still contain more material than can be properly exhibited. The total surplus is, therefore, very great. The present exhibits occupy 60,000 square feet of space, the entire floor space of the Museum being only about 100,000 feet. The anthropological collections properly installed would fill the entire Museum building.

CLASSIFICATION AND RESEARCH.

The third important function of the department relates to the use of the collections in conducting researches looking to exhibition and publication. All possible information relating to the specimens is secured,

and they are studied, compared, and classified. This work is essential to their intelligent utilization, and necessarily precedes installation and publication. It is the work which most constantly employs the attention of the curators and is referred to at length in the reports which they have submitted.

Researches having in view publication of results have been conducted by Prof. O. T. Mason, Dr. Walter Hough, Mr. J. E. Watkins, and Dr. Thomas Wilson. In several cases collectors have engaged in the study of the collections made by themselves. This is true especially of Dr. Fewkes, Mr. Cushing, Mrs. M. C. Stevenson, and Mr. Stewart Culin. Mr. J. D. McGuire has prepared a monograph on tobacco pipes, employing the collections of the Divisions of Ethnology and Prehistoric Archaeology, and Dr. Edward Eggleston, and Dr. H. Carrington Bolton have made studies of portions of the Copp collection of colonial relics in the Division of History and Biography.

INSTALLATION.

Display of collections constitutes a most important function of the Museum; it may be regarded as the essential function, since all others are as well subserved by the storehouse and laboratory. Public display is the feature that gives the Museum its status as an educational institution. The all-important question then is, in what way and by what methods shall the department undertake to instruct by means of its exhibits? Exhibition is not regarded simply as the presentation of the materials of a museum so that the public may see them. The essential point is the presentation in such logical order that the great truths of human history may be told in the briefest and clearest way.

There are several methods of presenting the materials of anthropology, but two of these are of primary importance and are used to the practical exclusion of the others. The first is the *geographical* or *ethnographical* assemblage, and the second the *developmental* or *genetic* assemblage. Other methods may be classed as *special*; they are the chronological, the comparative, the individual, etc. The first mentioned methods are adapted to the presentation of the general truths of anthropology, and the special methods are available for limited portions of the field—for special or limited ideas which are to be fully elaborated.

THE GEOGRAPHICAL OR ETHNOGRAPHICAL ARRANGEMENT.

The most natural assemblage of the materials illustrating the peoples of the world is in groups related one to another as are the peoples themselves in more or less well-defined geographical divisions. Thus assembled it is possible for the student or the ordinary museum visitor to make his studies pretty much as he would make them in traveling from country to country. The museum on this plan is a miniature world, so far as the objective materials of anthropology are capable of

constituting such a world. Under this method of classification all collections coming into the possession of the Museum may be intelligently assembled. From this assemblage, whether as exhibition or study series, selections of duplicate objects may be made for building up exhibits illustrating the history of man as seen from other points of view.

The materials employed in this grand division of the exhibits are not yet brought together in the Museum in their final relationships. The collections relating to living tribes and nations are separated from those representing prehistoric peoples of the same areas, the latter occupying the great hall of the Smithsonian Institution. It is hoped that in the near future the construction of a new building, or a reassignment of the present Museum spaces, may lead to the proper correlation of these important exhibits.

THE DEVELOPMENTAL ARRANGEMENT.

The second grand division of exhibits assumes to present selected portions of the collections on a totally different plan from the preceding, and they are thus made to record and convey a totally distinct class of ideas. The story told by these exhibits is not that of tribes or nations and their connection with particular environments, but that of development of the race along the various lines of culture progress, each series beginning with the inceptive or lowest stages and extending to the highest. These series are synoptic in character.

The following exhibits arranged on this plan have already been assembled or are in process of segregation:

Fire making	1 series	Glass	1 series
Hunting	1 series	Enamel	1 series
Fishing	4 series	Metallurgy	4 series
Agriculture	2 series	Sculpture	4 series
Weapons	6 series	Graphic arts	4 series
Tools of general use	8 series	Metric arts	3 series
Culinary arts	4 series	Music	4 series
Illumination	3 series	Medicine	1 series
House building	1 series	Photography	3 series
Textiles	3 series	Transportation	10 series
Costume	2 series	Electricity	8 series
Ceramics	3 series		

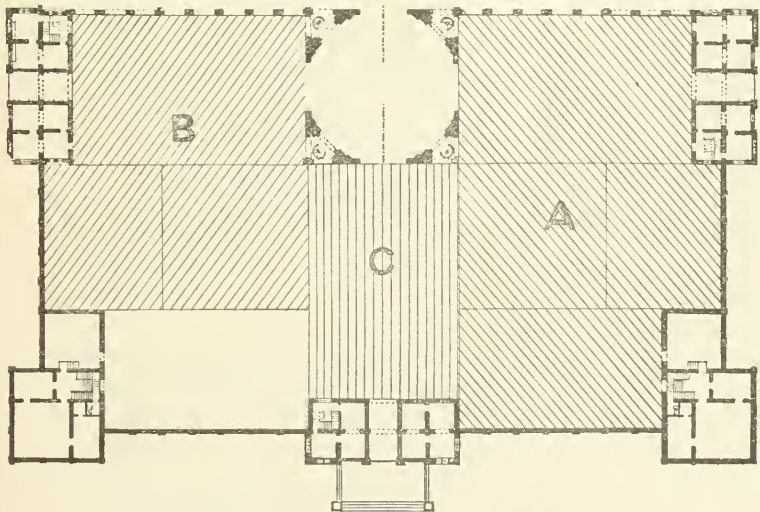
Each specimen in these series stands not as an isolated product of activity, but for an idea—a step in human progress; each series is a logical assemblage of these ideas—these steps in human progress, and the order is such as to suggest to the mind the broader truths of human history. The group of series properly arranged serves to illustrate the development of human thought and the gradual expansion of human interests.

SPECIAL ASSEMBLAGE—CHRONOLOGICAL, CYCLOPEDICAL, COMPARATIVE.

There are innumerable subjects covering limited portions of the anthropological field that call for special elaboration and separate assemblage of materials. The history of a single nation may be thus treated, as, for example, the history of the United States, a most appropriate subject for our National Museum; the history of France, appropriate to a French museum, the order of presentation being chronological. An elaborate assemblage of exhibits may be made for cyclopedical or reference use merely, as in the case of our former section of materia medica, but this method is not applicable to any large portion of the field of anthropology. Other exhibits still may serve for purposes of comparison of what different peoples do living under distinct environments, as, for example, the series of drinking vessels in the East Hall; of what has been accomplished by different nations or establishments, as in the ceramic section.

PLACEMENT OF EXHIBITS.

The accompanying ground plan will serve to indicate the distribution of the grand divisions of exhibits in the Museum building. The collections of prehistoric archaeology, placed in the great hall of the Smithsonian Institution, belong to Group A.



Grand divisions of anthropological exhibits in the Museum building.

The areas occupied by the three grand divisions are indicated by letters as follows:

- A. Geographical presentation of men and culture.
- B. Developmental presentation of human activities.
- C. Special presentations of activities and phenomena.

Four great halls and their galleries are devoted to exhibits assembled on the geographical plan (A), the peoples of the world being repre-

sented with as much completeness as the limitations of the national collections will permit. Three of these halls are occupied by American materials and one by exhibits representing the remainder of the world.

In the West North Range or Catlin Hall (formerly the lecture hall) are brought together, for the first time in any degree of completeness, very extensive collections obtained from Indian tribes of the great region which extends from the Atlantic coast to the Rocky Mountains. These are arranged primarily by provinces, and secondarily by stocks and tribes, but as yet they are only tentatively placed, as the entire hall is to be cleared in the near future for laying a floor and building galleries.

The walls of this hall are completely covered with portraits and scenes representing mainly the great group of tribes assigned to the hall. They are the work of George Catlin, the noted traveler and artist. To this hall are assigned also various groups of lay figures illustrating the tribes concerned, and the windows are to be embellished with a series of photographic transparencies covering the same ground.

The hall known as the Northwest Range contains collections from numerous Indian tribes of the northwest coast region, assembled at the north end, and very complete exhibits from the Eskimo tribes of the arctic regions, assembled in the south end of the hall.

The Northwest Court (Pueblo Court) contains exhibits pertaining to the great group of town-building tribes of Arizona, New Mexico, and adjacent sections, known as Pueblo (town) Indians. The antiquities of the region are also included, as they are known for the most part to pertain to the same general group of peoples. The collection of pottery is very extensive, and the series of lay-figure industrial and ceremonial groups make the display more than usually attractive.

In the gallery of this court are assembled, though not yet fully installed, collections from the tribes of the great arid region of the Southwest, other than the Pueblos, as well as limited series of objects representing the tribes of Mexico, Central America, and South America.

The West Hall contains extensive collections from a multitude of peoples of Europe, Asia, and Africa, and the gallery in the north side is occupied by materials from Australia and the Indo-Pacific Islands.

Grand Division B, which includes exhibits arranged to illustrate the progress and achievements of the race in many of its principal arts and industries, occupies three halls and two galleries in the northeast section of the building. A few additional exhibits belonging to this division are still installed in other sections of the Museum. The principles upon which they are assembled have been explained elsewhere. In East Hall adjoining the Rotunda is placed a group of exhibits epitomizing the history of various arts, domestic and industrial. In the eastern portion of the hall are collections illustrating transportation, electricity, physical experimentation, etc.

The Northeast Range (Boat Hall) is occupied by a very extensive

collection of boats, models of boats, and other exhibits exemplifying the development of water transportation, and especially the progress in steam navigation achieved in recent years by American inventors.

The Northeast Court, main floor, contains the remarkable collections illustrating the graphic arts brought together by Mr. S. R. Koehler, honorary curator, and the gallery is devoted to ceramics and examples of art products in glass, enamel, lacquer, metal, and ivory.

The exhibit of materia medica, brought to a high degree of completeness by the honorary curator, Dr. J. M. Flint, U. S. N., is installed in the East Hall Gallery (north side). The more comprehensive title of Division of Medicine having been substituted for that of "materia medica," heretofore used, it is proposed to arrange and develop the collection on the lines adopted for other branches of human activity, and to attempt to illustrate the history of medicine, or the evolution of ideas concerning disease and its treatment. The following provisional classification is taken from Dr. Flint's annual report:

A. Magical Medicine.

1. Exorcism, invocation, and incantation.
2. Amulets, talismans, and fetiches.

B. Psychical Medicine.

1. "Laying on of hands."
2. Suggestion.
3. Hypnotism.
4. Faith cure.

C. Physical and External Medicine.

1. Baths, massage, exercise, electricity.
2. Surgery, including acupuncture, cauterly, blood letting, and surgical operations in general.

D. Physiological or Internal Medicine.

1. Drugs (illustrations arranged in the following groups: (a) Egyptian medicine; (b) Greek medicine; (c) Hindoo medicine; (d) Arabian medicine; (e) Oriental medicine; (f) Indian medicine; (g) Modern medicine.

E. Preventive Medicine.

1. Water.
2. Air.
3. Food.
4. Beverages and condiments.
5. Soils.
6. Habitations.
7. Clothing.
8. Climate.
9. Disposal of the dead.
10. Disinfection.

The third grand division of exhibits, the *Special*, is represented by a number of collections of importance. The North Hall is occupied by a large series of exhibits arranged chronologically to illustrate the history of the United States. Beginning at the left, just within the north door, the period of discovery is presented. This is followed in order by the Colonial and Revolutionary periods, the war of 1812-14,

the Mexican war, etc. Continuing on the west side are collections illustrating the period of the civil war and notable personages and episodes pertaining to it and to succeeding periods.

The Division of Religions occupies the West Hall Gallery (south side), where interesting exhibits are assembled in groups illustrating the Jewish, Mohammedan, Buddhistic, and other religions. The large collection of musical instruments occupies the wall cases of the North Hall; various collections of ceramic products, glass, metal work, etc., grouped by peoples or manufacturing establishments, are placed in the gallery of the Northeast Court, and exhibits illustrating the composition of the human body and the analysis of foods and drinks occupy part of the East Hall Gallery (north side).

ANTHROPOLOGICAL EXHIBIT OF THE U. S. NATIONAL MUSEUM AT THE TRANS-MISSISSIPPI AND INTERNATIONAL EXPOSITION.

The frequency with which the National Museum has been called upon to prepare exposition exhibits has made it somewhat difficult to secure fresh and interesting material for display. To obviate this difficulty in the Department of Anthropology it was decided to assemble the limited group of exhibits required on a plan differing essentially from that adopted for previous expositions.

Heretofore the materials have been brought together in a somewhat disconnected way, to illustrate particular peoples, or especial arts or industries as represented by their products. On the present occasion the activities of man are treated from the point of view of their development. The various lines of progress are represented by a series of objects, each typifying a step in the industrial and intellectual evolution of the race.

As the exhibits required had to be drawn from all divisions of the department, a single series of objects in many cases being made up from the collections of two or more divisions or sections, members of the anthropological staff were called upon to act as committees in assembling the exhibits in which they were personally concerned. The full resources of the Museum were thus drawn upon, yet the objects taken were so few in number as not to interfere seriously with the present Museum installation.

Each series of exhibits epitomizes a single branch of art or industry and occupies a single case-front or fraction thereof, and may thus be conveniently seen at one view. The scheme of treatment or presentation is just such as the systematic student would adopt in writing the history of the subject, beginning with the inceptive stages and moving forward step by step to the highest development. The following subjects are presented, beginning at the left in the cases and progressing toward the right:

The use of fire.—The story begins with the fire of volcanoes and lightning and the carrying of firebrands from the sources for rekindling,

illustrated by means of colored drawings; it is continued in a series of exhibits showing progressive steps in the making of fire, illustrated by rubbing sticks, revolving drills, flint and steel, the lucifer match, and devices for producing the electric spark.

Illumination.—Two series of objects are chosen, the first illustrating the torch in its many forms, arranged progressively; the second, the lamp, beginning with the stone cup with oil and wick and ending with the argand burner and the arc light.

Fishing.—Of the various exploitative activities, so necessary to the sustenance of the race, only one group—the art of fishing—is represented, others having been omitted for want of space. Series 1 illustrates the dart in its multiplicity of forms; series 2, the various toggle devices; series 3, the hook; series 4, the sinker.

Domestic arts.—Household arts are represented by four series—one epitomizing the history of cooking, and three illustrating utensils and devices employed in eating and drinking (the cup, the spoon, and the knife and fork).

Tools of general use.—The history of the more essential tools of human handiwork is epitomized in seven series, each beginning with the simplest forms—mere splinters and masses of stone—and ending with the highest forms, the marvelous machine-operated tools of to-day. They are the hammer, the ax, the adz, the knife, the saw, the drill, and the scraper.

Weapons.—Weapons of war have performed a most important part in the history of progress, and the steps that led up from the stone and the club held in the hand to the steel sword and compound machine gun are strikingly suggested in two series presented: 1, weapons for use in the hand—piercing and slashing weapons; and 2, projectile weapons—the bow and arrow, the crossbow, the pistol and gun.

Transportation, marine.—The history of water transportation is epitomized in four of its leading lines of elaboration: 1, the hull, beginning with the log raft and ending with the magnificent substructure of the modern ship (represented by models); 2, hand propulsion—the pole, the paddle and the oar (in part models); 3, the paddle wheel (models); and 4, the screw propeller (models).

Transportation, land.—Land transportation is shown in six series (models): 1, the burden bearer, man and beast; 2, the sliding load; 3, the rolling load; 4, the wheeled vehicle; 5, the steam locomotive; and 6, the railway track.

The great group of elaborative activities concerned in manufacture is illustrated in four exhibits: The ceramic art, the textile art, metal work, and sculpture.

Ceramic art.—In this exhibit are included four series: 1, implements and devices employed in manufacture—modeling tools, decorating tools, stamps, molds, and the throwing wheel; 2, the vase, showing progressive steps in shaping, decorating, and the results of firing on

the paste and surface finish; 3, glass making in its relation to ceramics; and 4, enamel.

Textile art.—Weaving is represented by three series: 1, the spindle; 2, the shuttle; and 3, the loom; the latter illustrating in a remarkable manner the rapid transition from primitive to highly developed appliances.

Metal working.—The history of this important branch is partially presented in three series: 1, metal reduction; 2, products of manufacture, showing progressive order in processes, forms, and embellishments; and 3, tools and appliances of manufacture.

Sculpture.—The stone-shaping arts begin with the simplest known artificial modifications of natural forms and advance to the achievement of the highest ideals as represented in Greek art. Four series are shown: 1, prehistoric stone shaping (Europe); 2, aboriginal American sculpture; 3, sculpture of civilized nations; and 4, implements used in stone shaping. Series 1, 2, and 3 are separated for the purpose of contrasting the work of distinct periods and peoples.

Photography.—This art, the product of advanced culture, is represented by three series of objects, epitomizing the development of: 1, the camera; 2, the lens; and 3, the picture.

The book.—A limited series of objects is devoted to the history of the book, the method of assembling the several parts—the tablets and sheets—being the feature considered.

Electricity.—Electrical inventions, representing one of the youngest and most marvelous branches of human activity, are shown in three limited series—1, experimental apparatus (Henry); 2, transmitting apparatus (Morse and subsequent inventors); and 3, recording apparatus.

Music.—Four series are devoted to the history of as many varieties of musical instruments—1, wind instruments; 2, reed instruments; 3, stringed instruments; and 4, percussion instruments.

The system of arranging these series is such as to make them fully intelligible to the average museum or exposition visitor. A large label or sign is framed and placed outside of each case at the top; a general label for each exhibit, giving briefly the history of the subject treated, is framed and placed inside the case. Also a label explaining each progressive series is placed at the beginning of the series, and individual labels describing the specimens are placed with the specimens.

Associated with these developmental series are a number of life-size figures, modeled in plaster and appropriately costumed, intended to illustrate the practice of the arts in their primitive stages. They give a vivid impression of primitive processes and serve to contrast these with the methods and machinery of advanced civilization. The subjects presented are as follows:

The fire maker.—A Ute Indian making fire by twirling, between the palms of his hands, a wooden shaft with its point set into a second piece of wood.

The flint flaker.—A Powhatan Indian roughing out stone implements from quartzite boulders.

The hominy huller.—A southern Indian woman pounding corn in a wooden mortar. Figure in plaster, with costumes restored from drawings made by members of the Virginia colonies.

The skin dresser.—A Sioux woman using a scraping or graining tool in preparing a buffalo robe.

The potter.—A Papago Indian woman modeling an earthen vessel.

The metal worker.—A Navajo Indian making silver ornaments. Processes probably introduced, in part, at least, by whites.

The belt weaver.—A Zuñi girl, with primitive loom, weaving a belt.

REPORT ON THE DEPARTMENT OF BIOLOGY FOR THE YEAR 1897-98.

By FREDERICK W. TRUE,
Head Curator.

The Department of Biology was established at the opening of the fiscal year, July 1, 1897, by bringing together under a separate administrative head the several zoological divisions already existing in the Museum, and the Division of Plants. The collections represented by these various divisions together constitute the larger part of the Museum, and have been accumulating for nearly half a century. The majority of the divisions themselves have been in existence since the reorganization of the Museum, in 1881, and several of them for a much longer period.

On account of the great length of time that the collections have been in existence, and the well defined and long-established methods of systematic zoology and botany, no radical changes in the mode of conducting the administrative or scientific business of the divisions has been necessary or in contemplation. The efforts of the head curator in the past year have been, as they probably will be in the future, largely in the direction of developing those features which in the past, for various causes, have not had due prominence.

The conditions prevailing as regards space and amount of assistance are far from ideal, and until much increased facilities in these directions have been provided it seems improbable that any great general advance can be made.

On the side of the exhibition of collections (the matter which appeals most directly to the public) the deficiency is in the nature of insufficient and unsuitable space. Without a rearrangement which would involve both of the other departments of the Museum and an amount of work incommensurate with the result obtained, the proper sequence of exhibition collections can not be had in the present quarters.

At the close of the last year the birds, reptiles, fishes, and mollusks and other invertebrates, except insects, were displayed in the Smithsonian building, while the mammals, insects, and collections representing comparative anatomy were displayed in the Museum building. As any general transfer of the birds is impracticable at the present time, endeavor was made to at least somewhat improve the sequence by removing the insects to the Smithsonian building and transferring the exhibits of batrachians, reptiles, and fishes to the Museum building. This was accomplished without a great amount of labor or expense,

and is a gain to the extent of bringing all the exhibits of invertebrates together in the Smithsonian building.

The erection of galleries in the Museum building, while it did not involve as much rearrangement in this department as in those of anthropology and geology, nevertheless made a complete reinstallation of the large exhibition series of mammals unavoidable.

This change brought to view the desirability of having the zoological collections, for the most part at least, arranged in accordance with some one comprehensive plan. While many schemes of more or less merit suggested themselves, the limitations as regards the extent and character of the space at command were such as to preclude most of them; while the anticipation that a new building may be provided at no very distant time in the future, made the adoption of others seem undesirable. After giving the matter serious thought, I decided that the zoological exhibits should be arranged on a faunal basis, special prominence being given to the faunas of the United States. This principal series is to be supplemented by various smaller special series, illustrating important topics in biology. The adoption of this plan, it is believed, will cause the exhibits to be more significant and more attractive to the public than hitherto, and at the same time the labor and expense involved in effecting the modification will be limited.

A good start in this direction has been made during the past year in connection with the mammals, batrachians, reptiles, and fishes. The greatest change, as already stated, was made necessary in the Division of Mammals on account of the erection of galleries in the south hall of the Museum building, in which the exhibits are placed. The cases containing groups of large mammals could no longer stand in the center of the hall, and were therefore arranged at the sides under the galleries. The main floor is now devoted to an American faunal collection, and the galleries to the faunas of the rest of the world. It is the intention to make the North American series complete, but other faunas can only be represented by genera, even if it were desirable to do so, on account of lack of space. The old wall cases were removed to the gallery, and it is the intention to add to them at the beginning of the next fiscal year, so that they will occupy the whole of the wall surface on both sides of the gallery. Floor cases along the railings will be employed for the smaller species.

The American batrachians, reptiles, and fishes were brought together in the southeast range. At the close of the year the cases in the Smithsonian building containing marine invertebrates were rearranged, but a complete reinstallation of the specimens and a modification of a majority of the cases will be needed. The cases containing exhibits of insects were removed, as already stated, to the Smithsonian building, but no work has as yet been done on them. No extensive change is at present in contemplation in connection with the exhibits of birds, mollusks, or comparative anatomy.

Hitherto the Museum has had no botanical exhibition series, except a small collection of specimens of native and foreign woods, pictures of trees, etc., intended to illustrate the subject of forestry. This collection was withdrawn from exhibition some years ago. To form a really significant botanical exhibit it is recognized that it will be necessary to begin *de novo*. Any advance in this direction is hedged about by difficulties because of insufficient space. A beginning has, however, been made by mounting under glass a representative series of seaweeds. To these it is the intention to add outline series representing other groups of plants, and to supplement these by special exhibits, such as illustrations of poisonous plants, models of poisonous and edible fungi, etc. The plans for these are, however, subject to modification in the coming months, and it is even possible that the construction of galleries in the ranges, and in particular in the southeast range, for which provision was made by Congress, will prevent any further installation of exhibition collections during the coming year.

The additions to the zoological and botanical collections during the year have been very numerous, and in some directions unusually important. First should be mentioned the donation by Messrs. Henry G. Hubbard and E. A. Schwarz of their collection of Coleoptera, principally North American, comprising about 200,000 specimens, and representing approximately, 12,000 species. The addition of this great and important collection places the National Museum in advance of all others as regards North American Coleoptera, and the generosity of the donors in presenting this vast amount of material, which they have accumulated with so much labor and expense, can not be too highly extolled.

The labors of Dr. W. L. Abbott, who for so many years has been a most generous benefactor of the Museum, demand liberal commendation. During the past year this indefatigable collector presented to the Museum large collections of birds, mammals, reptiles, insects, and other animals from Lower Siam and Kashmir. The Abbott collection comprises the larger portion of the most valuable Old World material of the Museum. Dr. W. L. Ralph has continued his valuable gratuitous additions to the collection of birds' eggs, and in this connection should also be mentioned the gift of Prof. Dean C. Worcester, of Ann Arbor, Michigan, comprising more than 600 bird skins, 900 eggs, and 250 birds' nests from the Philippine Islands. The friendly cooperation of Dr. L. T. Chamberlain has resulted in large additions to the collection of fresh-water mussels. The largest acquisition of the year in this direction was the gift of Dr. R. Ellsworth Call, of Cincinnati, comprising over 86,000 specimens. Mr. Outram Bangs, of Boston, Massachusetts, presented a very interesting series of bird skins, 170 in number, from Santa Marta, Colombia.

The additions to the herbarium for the year exceed 40,000 specimens, of which about one-half were obtained by purchase. Gifts of plants

have been numerous and amount together to about 4,000 specimens. Prof. O. F. Cook presented 662 specimens of Liberian plants in excellent condition and of much interest. Dr. B. L. Robinson, of Cambridge, Massachusetts, presented a large series of valuable Mexican plants, numbering in all about 1,700 specimens. These were admirably supplemented by another collection of Mexican plants presented by Mr. E. A. Goldman, of Alila, California. About 6,000 plants were acquired by exchange during the year.

As already stated, about 20,000 herbarium specimens were purchased. Every important American collection offered for sale was obtained, with the result that the National Herbarium has been greatly enriched.

The scientific bureaus of the Government, particularly the U. S. Fish Commission and the Biological Survey and Division of Botany of the Department of Agriculture, have continued to make very valuable additions to the national collections. Especially to be mentioned are the invertebrates collected by the naturalists of the *Albatross*, in 1896, on the coasts of California, Japan, and Kamchatka, and in Bering Sea, and the specimens obtained by the assistants of the Commission during the past thirteen years, comprising more than 600 lots. Numerous valuable types and cotypes of different species of fishes collected by the Commission have also been transmitted. The Biological Survey collected in Mexico a large series of land shells, which are regarded by Mr. Dall, the curator of the Division of Mollusks, as the most intrinsically valuable acquisition of the year in that direction. Mr. Dall remarks:

This series, collected at various times and localities, contains an unusual number of fine undescribed species and numerous others new to the collection. The proportion which may be described as really valuable is unusually large.

The accumulation of valuable specimens received singly or in small lots from numerous friends of the Museum deserves notice. An enumeration of these will be found in Appendix II.

With the exception of plants, few purchases of importance were made for the Department during the year, but a series of rodents from Patagonia, collected by Mr. W. A. Peterson, comprising 239 specimens is deserving of notice. The collection of mammals is very deficient in South American specimens, and this material was especially desirable.

An extended reference to the explorations of members of the Museum staff will be found on page 69. Collections were made by Messrs. Rose and Pollard in Mexico and Florida, respectively; by Dr. Leonard Stejneger in the vicinity of the Commander Islands; by Messrs. Schuchert and White on the coast of Greenland, and by Mr. Robert Ridgway in Florida. The explorations of Mr. R. P. Currie in Liberia were referred to in the last Annual Report, although the larger portion of the material obtained was not received until after the beginning of the present fiscal year.

Some important changes were made in the personnel of the department during the year. In the Division of Insects, Dr. Harrison G. Dyar was appointed custodian of Lepidoptera. Dr. William L. Ralph succeeds the late Maj. Charles Bendire as custodian of the Section of Birds' Eggs. Mr. W. T. Swingle was appointed custodian of the Section of Algae and Mr. D. G. Fairchild of the Section of Lower Fungi. These gentlemen have rendered exceedingly valuable services in their several sections during the year. The department is indeed dependent for its successful operation at the present time very largely upon the gratuitous, disinterested efforts of its honorary curators and custodians, the value of whose services can not be overestimated.

In the Division of Marine Invertebrates Miss Harriet Richardson and Miss Mary B. Smith served as volunteer assistants.

The routine work of entering, classifying, and caring for the collections in the several divisions has been carried on continuously, and it may be said that the condition of the collections in general is better than ever before. The greatest drawback has been found in the lack of sufficient laboratory space, the working rooms in some of the divisions being crowded to such an extent that it is almost impossible for the assistants to move about in them. This crowding affects the work in many ways, making the arrangement of collections unavoidably unsystematic, to a large extent, and rendering nearly impossible those operations which require the use or inspection of large numbers of specimens at the same time. The extensive collection of mammals of the Department of Agriculture, including especially the large forms, were brought together in a part of the southeast range, which has been screened off for the purpose, no other space being found for this bulky material. This encroachment upon the exhibition space is considered undesirable, but can not be avoided unless additions are made to the Museum building or a larger structure provided. A similar provision was made for the National Herbarium, in the Division of Plants, a portion of the East Hall gallery being given up for the purpose. The collection of plants has grown to great size and importance and has entirely overflowed the quarters assigned to it a few years since.

In the Division of Mammals the type specimens were brought together and carefully labeled with special red tags where needed. They will be kept hereafter in special cases. The overcrowding in the upper laboratory was somewhat relieved by a rearrangement of specimens, but the case room is at present inadequate. The study series is in an excellent state of preservation, but much in need of a rearrangement, which, however, can not be accomplished until more case room is provided.

In the Division of Birds Mr. Robert Ridgway, curator, reports that a large portion of the series, including all the water birds and waders, was thoroughly overhauled and rearranged in new dust-tight cases, which have been provided for the purpose. Some twenty families still

require attention, and are now, for the most part, crowded into cases which are unsuitable and are practically inaccessible. A special effort has been made during the year to bring together type specimens of birds and to see that they were properly labeled and arranged in cases made for the purpose.

Doctor Ralph devoted a large amount of time to clearing away the accumulation of work in the Section of Birds' Eggs since the death of Major Bendire. The collection now numbers over 64,000 specimens, and is by far the most extensive in existence. While the eggs themselves are in excellent condition, the collection of nests is only indifferently provided for, and new cases will be needed.

As is fully recognized by the curator, the exhibition series of birds is by no means satisfactory. The cases in the Smithsonian building are old and not dust tight, and are furthermore very much crowded together, on which account, and because of the insufficient lighting in the hall, the collection can not be appreciated at its true value. As already stated in another part of the report, an attempt will probably be made during the coming year to remedy these defects to a certain extent, but the problem is a very difficult one, and it is doubtful whether the exhibit can be brought up entirely to modern standards without more expense than would be justified under present conditions. Special attention was given to some of the series, such as the hornbills, a very striking group, of which the Museum possesses a full collection. This series was entirely overhauled and new forms added.

A special series arranged for children has been for some time exhibited in a small room adjacent to the main hall, and was relabeled throughout during the year.

In the Division of Reptiles and Batrachians, the exhibition series was removed from the Smithsonian to the Museum building, as already stated, and rearranged to form a faunal North American series. The exotic mounted skins, which were indifferent in quality and insufficient in number and variety to form a series of any significance, were boxed and stored, duplicates of American species were removed, and the remainder arranged in systematic order. The curator, Dr. Leonhard Stejneger, reports the general collections as being in excellent condition, but no extensive operations were carried on, as he was necessarily absent a considerable portion of the year in connection with his duties as a member of the Fur Seal Commission.

The exhibit of the Division of Fishes at the close of the last fiscal year consisted of several cases of casts and a large number of alcoholic specimens in jars, all of which were displayed in one of the smaller halls in the Smithsonian building. For reasons previously stated, the casts were removed to the Museum building, where they were installed in the southeast range in cases more suitable, and in such manner that the characteristics of the American fauna could be appreciated at a glance. The large collection of alcoholics was withdrawn from exhibi-

tion, it having been shown that they could scarcely be made interesting or instructive to the public. A place was found for them in the laboratory, which for some time had been occupied by mammals, a change which has the advantage of allowing them to be protected from the light and make them accessible to students without intruding upon the public. Type specimens were placed in special cases and guarded from the light, which causes deterioration.

The cases formerly used for the exhibition of fishes being old and of a pattern not now considered suitable for such purposes, they were removed to the laboratory and there made use of for the better arrangement of the general study series.

Mr. William H. Dall, curator of the Division of Mollusks, reports the great collections of that division in good condition, but calls attention to the inconvenience arising from overcrowding, which increases year by year. A very large amount of material, comprising no less than 3,500 species of shells, was identified for correspondents of the Museum during the year. In connection with this work, however, the Museum receives many valuable specimens.

There has been very great activity in the Division of Insects during the year, which the honorary curator, Dr. L. O. Howard, regards as a phenomenal one in the history of the division. He writes:

The surprising part, however, is in the fact that the actual number of species and specimens and their scientific value surpasses anything in the history of the division, since, notwithstanding the wonderful increase and value of the specimens received last year, due to the extensive exotic material presented by Dr. W. L. Abbott, those received during the present year will more than equal those received during the past decade. This increase is due principally to the very large and valuable collection of North American Coleoptera presented by Messrs. Hubbard and Schwarz, while it is worthy of note that the additions, without this collection would be nearly three times as large as those in the previous fiscal year.

The collections are in a better state of preservation than ever before, and a large amount of work has been done in rearranging and classifying specimens. The material in each order has been divided according to continents and arranged systematically, by which plan the labor of identifying new material is considerably lessened. Dr. Dyar, custodian of Lepidoptera, has rearranged the collections of that order, adding many species from his private collection, and in both ways very greatly increasing the value of the collections. This voluntary work is of much importance to the Museum and is highly appreciated. All the types and cotypes at present in the collection have been properly labeled during the year and recorded in a special catalogue. The whole number of these specimens is nearly 6,000.

The chief operation of the Division of Marine Invertebrates was the preparation of 100 sets of duplicate specimens, designed for distribution to high schools throughout the country. Each set contains specimens representative of about 100 species, and more than 30,000 specimens are included in the entire series. About one-half of these

sets have already been distributed. The distribution of this large amount of material has relieved the storerooms and cases. As already stated, a considerable change is contemplated in the exhibition series of the division, and at the close of the year work was begun by a readjustment of the the cases in the exhibition hall.

The curator of the Division of Comparative Anatomy, Mr. F. A. Lucas, was absent a considerable portion of the year in connection with his duties as a member of the Fur Seal Commission. On that account, and because he is also charged with the general care of the vertebrate fossils, a large amount of work has not been done on the osteological collections. So far as the exhibition series is concerned this is not detrimental to the Museum, as the series is already very full and very carefully arranged and labeled. The condition of the reserve series, however, is not satisfactory, the curator reporting that more than double the number of drawers now in use are needed for the accommodation of specimens and their proper arrangement and to permit the withdrawal from storage of the large amount of material now practically inaccessible.

In the Division of Plants Mr. F. V. Coville, honorary curator, reports that several important changes and improvements have taken place.

In order to provide a circulation aisle for visitors around the East Hall gallery it was necessary to move the screen at the east end back some 4 feet into the botanical laboratory. The loss of space was compensated for by assembling a double row of cases on the south side of the gallery for its whole length, making in all about 200 running feet. Whether this arrangement can be maintained permanently is perhaps doubtful.

Two rooms in the east tower were fitted up for the collection of cryptogamic plants, which, however, is likely to soon outgrow these quarters.

The sectional herbarium, numbering some 30,000 specimens, which was formerly kept in the Section of Paleobotany, was returned to the general collection, and the work of distributing the specimens to their proper places has progressed satisfactorily during the year.

The separation and marking of type specimens has been continued. During the year 252 such specimens were marked, making a total thus far of 1,596.

Scientific investigations of more or less wide scope have been carried on in the several divisions of the department during the year, and the results obtained are very creditable to the staff. Mr. Robert Ridgway has made satisfactory progress on the comprehensive manual of North and Middle American birds, which he has had in preparation for a considerable time. The head curator of the department has continued studies on the cetaceans, and has completed a paper on the nomenclature of the whalebone whales of the North Atlantic. Mr. G. S. Miller, jr., has been engaged in an investigation of the Free-tailed bats.

He has published several minor papers on mammals during the year. Dr. T. H. Bean has continued work on the collections of fishes made by the Fish Commission steamer *Albatross* in South American waters, and has made investigations in the waters of New York with special reference to fish life. Mr. Barton A. Bean has continued investigations on the collections of Mexican fishes and has completed one portion of the work, the results of which are now in hand for publication. He also made a study of the fishes of Wallowa Lake, Oregon, for the U. S. Fish Commission, the results of which are given in a report already in the hands of the Commissioner. Mr. W. H. Dall has devoted considerable time to a revision of the bivalve shells in connection with his work on the Tertiary invertebrate fauna, and has made various minor investigations. The study of the fresh-water mussels has been continued by Mr. C. H. Simpson with important results. Dr. L. O. Howard has continued studies on the parasitic insects of the family Encyrtinae, especially those parasitic on the Coccidae, and has completed one paper on that group. Mr. W. H. Ashmead has nearly completed his monograph of the insects of the family Braconidae, which he has had in hand for several years, and has worked up four large collections of Hymenoptera. The collections of insects made by Messrs. Stejneger and Barrett-Hamilton, of the Fur Seal Commission, on the Commander Islands, have been worked up and reported upon by Messrs. Schwarz, Dyar, Coquillett, Banks, and Cook. The results will be published in the report of the Fur Seal Commission. Mr. Coquillett completed his monograph of the flies of the family Tachinidae and his revision of the Simuliidae, and both have been published. He also worked up the Japanese Diptera, received from Professor Mitsukuri, and completed a revision of the family Scatophagidae. He has under hand revisions of the Helomyzidae and Sapromyzidae. Prof. O. F. Cook has continued studies on the Myriapoda and the Orthopteran insects of the families Mantidae and Phasmidae. Mr. J. E. Benedict has completed his studies of several groups of Isopod Crustaceans and published reports on the Arcturidae and the genera *Synidotea* and *Idotea*. He has continued work on the Galatheidae and has in preparation a paper on the genus *Munidopsis*. Miss M. J. Rathbun completed a paper on the Decapod Crustaceans of Jamaica and on the Brachyuran Crustacea collected by the Iowa University expedition of 1893 to the Florida Keys and Bahamas. She also completed three minor papers on Crustaceans and made other studies in that group.

Mr. J. N. Rose, assistant curator in the Division of Plants, has devoted a considerable portion of the year to the determination of the botanical material collected by him in Mexico, with a view to the publication of the results of his observations.

The collections of the department have been made use of extensively by naturalists throughout the country and abroad, various series and single specimens being loaned, as in previous years, for investigation.

(For a detailed list of loans see page 64.) The loans of botanical material have been very numerous, aggregating in all about 3,900 specimens. Included in the records of loans are the names of the botanical departments of Columbia, Cornell, and Harvard universities and other universities and colleges, together with botanical gardens and museums at home and abroad. In addition to these loans of specimens the collections have been studied in Washington by numerous specialists during the year. The naturalists of the U. S. Fish Commission and of the Biological Survey and other bureaus of the Department of Agriculture have of course had free access to the collections, and have made use of them to a considerable extent.

The publications for the year (a list of which will be found in the Bibliography) show a gratifying activity on the part of the scientific staff of the department, and indicate also the large extent to which the collections are being used by naturalists generally.

Considerable time was occupied during the year in preparations for an exhibit at the Trans-Mississippi and International Exposition, at Omaha, Nebraska. The exhibit which was planned by the head curator, and assembled with great success by the heads of the several divisions, consists of a representation of the aquatic faunas and marine plants of the United States. Every group of animals inhabiting our waters is included, from the lowest to the highest, and an extensive and most excellent series of seaweeds. The large mounted birds and the casts of fishes and reptiles are displayed in a large wall case constructed for the purpose. The remainder of the exhibit is shown in narrow floor cases, with full plate-glass fronts. It includes some novelties, such as jelly fish preserved in formalin, which have probably not been seen at any previous exposition. The whole series is carefully labeled.

REPORT ON THE DEPARTMENT OF GEOLOGY FOR THE YEAR 1897-98.

By GEORGE P. MERRILL,
Head Curator.

The past year has been one of great, if not unparalleled, progress in the department. This for the reason that under the reorganization which was effected early in the year, proper coordination of the various divisions was for the first time rendered possible.

Owing to the suspension of work of all kinds in the exhibition halls during the construction of the new galleries and exhibition cases, together with the prolonged absence of the head curator in Europe, it is true, however, that but little of this progress is as yet evident to the public.

Since actively assuming charge of the department, early in November, the head curator has devoted much time to going over the written and printed records of the various United States exploring expeditions and surveys with a view to ascertaining what geological materials had been collected which could be properly considered the property of the Government, and what disposition had been made of the same. This has resulted in bringing together some of the scattered materials which had been loaned in years past for study purposes, or which had never been turned over to the custody of the Museum. Moreover, so soon as it became apparent that the department was ready and more than willing to take charge of the materials, Prof. O. C. Marsh announced his readiness to turn over the large series of vertebrate fossils collected under his direction during his connection with the U. S. Geological Survey under J. W. Powell. Mr. Lucas, the acting assistant curator of the Division of Vertebrate Paleontology, spent four weeks, with proper assistance, at New Haven in May and June of this year, with the result that two carloads of these fossils, comprising many specimens of *Tricratops*, besides *Dinoceras*, *Elotherium*, and other Miocene forms, have already been received.

Arrangements have been made, through the administrator of the estate of the late E. D. Cope, for the return to the Museum of the extensive series of Eocene fishes, collected principally during the years 1872-73 in Utah and Wyoming, and retained by Professor Cope for study. It is confidently expected that these will reach the Museum even before this report appears in print.

In addition to the collection of vertebrate fossils already noted, the division has obtained, through purchase, a valuable collection of Mosa-

saur from the Cretaceous of western Kansas, two collections of Elasmobranch teeth and spines from the Carboniferous of Iowa, and an unusually fine skull and fore-limb bones of *Claosaurus*.

Through the U. S. Geological Survey was obtained a small collection of vertebrates, including a new species of *Dinictis* and a *Suilline* from the Miocene of Dakota.

The Section of Invertebrate Paleontology has likewise been greatly enriched, the two most important accessions being gifts. Through the bequest of the late Mr. I. H. Harris the Museum has come into the possession of his private collection of over 20,000 specimens of fossils. This is one of the finest collections ever made from the rocks of the Cincinnati group, and is particularly rich in starfishes, crinoids, and trilobites, and, moreover, contains a number of original types.

Mr. R. D. Lacoë, of Pittston, Pennsylvania, to whom the Museum is already so largely indebted, has presented his extensive collection of fossil insects. This comprises upwards of 4,640 specimens, of which more than 200 are types. In addition, he also presented 97 other invertebrate fossils, 408 vertebrate fossils, and added 132 specimens to his series of fossil plants. From the U. S. Geological Survey was received a series of over 600 specimens of Kinderhook crinoids, corals, and mollusca, and 450 crinoids from the Burlington group in Iowa. In addition, Messrs. Schuchert and White, of the Museum and Survey, made a valuable collection representing the flora of the various Cretaceous and Tertiary horizons of North Greenland. Other valuable materials, including an excellent *Placenticerus*, 22 inches in diameter, from Dakota, were obtained either by purchase or otherwise.

The Division of Mineralogy has materially benefited during the year through the acquisition of much new material, including several new and rare species.

The Division of Physical and Chemical Geology reports the acquisition of a large cluster of basaltic columns from near Bonn, Prussia; some large masses of a beautiful orbicular granite from Sweden; fulgurites on andesite from Little Ararat in Armenia, besides a large amount of petrographic material from the U. S. Geological Survey and other sources. The Economic Series have been enriched through the acquisition of some beautiful clear masses of rock salt from Heilbron, Prussia, collected by the head curator; kaolins and clays from Germany and Saxony; an excellent series of telluride ores from the Cripple Creek district, Colorado, and other materials which need not be mentioned in detail here.

Aside from what has been accomplished in the Division of Mineralogy, but little progress has been made in the work of installing the exhibition series. This is for the reason that the erection of the new galleries in the exhibition halls of the Divisions of Paleontology and Economic Geology, was not completed in season for more than a beginning to be made. Indeed, the new cases in the paleontological halls are not yet in readiness. Moreover, for a period of several weeks the energies of

nearly every curator and those of his assistants were fully occupied in the work of preparation for the Trans-Mississippi Exposition. The details of this work have been the subject of a special report, and need not be repeated here.

Mr. Lucas reports that in the Section of Vertebrate Paleontology a large amount of preparatory work has been done incidental to strengthening, restoring, and preparing for exhibition the skeleton of *Zeuglodon*. Two skulls of *Oreodon*, and one of *Mesohippus* from the Evans collection have been cleaned, a fine skull of *Claosaurus* and the upper portion of a magnificent *Triceratops* nearly prepared for exhibition, and smaller skulls and parts of skeletons wholly or partially prepared for exhibition or study. Work of this nature is extremely slow and laborious, and additional preparators are sadly needed. When it is remembered that, excepting when aided by Mr. Schuchert and others in the Section of Invertebrate Paleontology, the entire work of this division has thus far been carried on by Mr. Lucas, with the assistance of one clerk and one preparator, it will be recognized at once that surprising progress has been made.

The prolonged absence of Mr. Schuchert, incidental to the purchase of materials for the Trans-Mississippi Exposition, and a subsequent trip into Missouri, together with his Greenland trip earlier in the season, has necessarily greatly retarded his work. Satisfactory progress has been made in installing the study series and in the preparation of exhibition material, though this, too, is delayed, owing to the condition of cases and exhibition halls. Practically nothing has been accomplished with the paleobotanical series. It is expected that the appointment of an assistant in charge of this collection, and the completion of the galleries and cases, will enable me to report more satisfactory progress another year. Up to this time all Museum work done on these collections has been voluntary by members of the paleobotanical staff of the Geological Survey, or by Mr. Schuchert and his assistants, whose time was already more than occupied by the work of their own division.

In the Division of Mineralogy I have to report satisfactory progress in the installation of the exhibition series. The Systematic Series, the collection of meteorites, and several special series are now, for the first time, satisfactorily installed, and Mr. Tassin, who has had immediate charge of the work, is entitled to much credit, not merely for his energy and industry, but as well for the taste he has manifested in the selection and display of the material.

Much work yet remains to be done in the way of supplying deficiencies and labeling, but it is not too much to say that the collections as a whole are in excellent condition.

In the Division of Physical and Chemical Geology (systematic and applied) of which the head curator has immediate charge, no progress whatever has been made with the exhibition series until within a

period of some two weeks, owing to the delay in the completion of the gallery cases and Mr. Newhall's absence in Nashville and Omaha. The work is now progressing satisfactorily.

An immense amount of detailed work has been accomplished in overhauling and classifying collections stored in boxes and drawers, but much yet remains to be done.

Scarcely any investigations of note have been undertaken by any of the curators, owing to the pressure of other matters and the unsatisfactory condition of the exhibition halls. The head curator was himself absent in Europe during the first five months of the year, attendant upon the meetings and excursions of the Seventh International Geological Congress, and engaged in a study of European museums. Mr. Lucas has nearly completed his work on the Fossil Bison of North America, and Messrs. Charles Schuchert and David White have made a preliminary study of the fossils collected by them in Greenland during the summer of 1897. Their results are now in press.

With the exception of the collections made by Messrs. Schuchert and White in Greenland and the necessarily limited amount of material brought back by the head curator from Russia, scarcely anything has been done toward the enrichment of the collections through the direct efforts of Museum officials. The collections made by the U. S. Geological Survey and obtained by gift, purchase, and exchange have been already referred to.

The usual custom of loaning collections for study has been adhered to. Two small lots of vertebrate materials were loaned during the year, the one to Prof. H. L. Osborn, of New York, and the other to Dr. C. R. Eastman, of Cambridge. Dr. J. F. Whiteaves, of Ottawa, Canada, was in like manner loaned a collection of Hamilton fossils, and Dr. George H. Girty, of the U. S. Geological Survey, has had the loan of a collection of English Carboniferous pelecypods for comparison with American species. A collection of thin sections of roofing slates was loaned Prof. T. Nelson Dale, of Williamstown, Massachusetts, and the U. S. Geological Survey has on sundry occasions been granted the usual courtesies.

The condition of the laboratories and exhibition halls has been such as to afford little encouragement to students and investigators. Prof. O. P. Hay has studied the large Cretaceous fishes from Kansas, with a view to deciding certain points in the structure of the skull and vertebral column, and also to ascertain whether or not the genus *Portheus* is synonymous with *Xiphactinas*. Several new points on the structure and affinities were ascertained and the conclusion reached that *Xiphactinas* Leidy, was identical with *Portheus* Cope. Similar results were reached independently by Alban Stewart, of Lawrence, Kansas. Prof. Henry F. Osborn has likewise studied the type of such species of *Coryphodon* as are represented in the collections.

Aside from the studies of members of the U. S. Geological Survey,

no investigations of note have been carried on in the Museum by other than its officers, either in the sections of Invertebrate Paleontology or Paleobotany. In the Division of Physical and Chemical Geology, Mr. Thomas L. Watson, now of the State survey of Georgia, and Dr. E. C. E. Lord have each spent several months, the one conducting investigations relative to the weathering of basic eruptive rocks and the other working on the rocks collected by Dr. Edgar A. Mearns along the line of the Mexican Boundary Survey, and a series of eruptive rocks from Casco Bay, Maine.

The reasons already enumerated have necessarily cut down the number of papers that might otherwise have been published by the curators. Such as have appeared are sufficiently noted in the Bibliography.

The rapid accumulation of materials, and particularly large materials like vertebrate fossils, bids fair to tax to the utmost our resources for handling, preparation, and proper care. When it is recalled that the preparation of a single skull may require the services of a skilled preparator for months, it will be seen at once that our present force is quite inadequate. Moreover, work and storage rooms are pitifully cramped. When further, one recalls the strikingly interesting character of the display that is possible with this class of material, as well as its great value from a purely scientific standpoint, the desirability of pushing the work with all possible vigor becomes at once apparent, and I feel that I can not too strongly urge the granting of additional funds for the purpose.

The work of rearranging the collections in physical geology, involving the actual moving of upward of 100,000 specimens, labeling, numbering, and bringing the card catalogue up to date, will consume a very large portion of the coming year.

The same may be said regarding work in the sections of Invertebrate Paleontology and Paleobotany. There are at present not far from 1,000 boxes of fossil materials of all kinds in storage, which must be overhauled, identified, duplicates assorted for exchange and distribution, worthless portions rejected, and the remainder made available for study and exhibition.

The amount of detailed labor essential to the proper care of the collections can be appreciated only by those who have had experience. This applies to other departments than my own.

Notwithstanding the fact that we are for the time being overburdened with materials, no opportunity should be lost for securing more, even though the same may remain years in storage. It is too much to expect that the present favorable conditions for collecting will always exist. Every reported discovery of interesting material, by members of the U. S. Geological Survey, or other parties, should be investigated, and where the character of the material warrants, immediate steps should be taken toward its procurement by purchase or otherwise. It must be borne always in mind that delays in these matters

result disastrously. This is particularly true regarding vertebrate remains which, once exposed, become quickly ruined, unless promptly and properly cared for, and inexperienced collectors often do more harm than good. Moreover, other institutions, both American and foreign, are ever on the alert to obtain that to which we naturally feel the National Museum is best entitled.

I can not refrain, in conclusion, from stating that too much praise can scarcely be awarded the individual curators and their assistants for the untiring energy and patience manifested, and their willingness always to lay aside individual desires and preferences for the welfare of the department as a whole. But for this, the work of the head curator would be disheartening in the extreme.

SUMMARY OF THE OPERATIONS OF THE YEAR.

THE MUSEUM STAFF.

On July 1, 1897, Mr. W. H. Holmes, Dr. Frederick W. True, and Dr. George P. Merrill were appointed head curators of the newly organized departments of Anthropology, Biology, and Geology, respectively. Mr. W. H. Holmes, who had been connected with the Field Columbian Museum in Chicago, assumed his duties at the National Museum on October 1.

Mr. William H. Ashmead, of the Department of Agriculture, was appointed assistant curator of the Division of Insects in the National Museum on July 1, and Mr. Gerrit S. Miller, jr., was given a temporary appointment as assistant curator of the Division of Mammals.

Dr. W. L. Ralph, of Utica, New York, was made honorary custodian of the Section of Birds' Eggs on November 12.

Mr. W. T. Swingle and Mr. D. G. Fairchild, both of the Department of Agriculture, were appointed custodians of the Sections of Algae and Lower Fungi, respectively, in the Division of Plants. These appointments took effect December 7.

Dr. Harrison G. Dyar was appointed custodian of the Section of Lepidoptera, Division of Insects, on November 12.

On April 30 Dr. J. Walter Fewkes was appointed a collaborator in the Division of Ethnology.

Dr. F. W. True was appointed Representative of the Smithsonian Institution and National Museum for the Trans-Mississippi and International Exposition (Omaha), and Mr. M. V. Cox, chief special agent.

In the absence of Mr. W. V. Cox, Mr. J. L. Willige continued to act as chief clerk.

A complete list of the members of the scientific and administrative staff is given in Appendix I.

APPROPRIATIONS AND EXPENDITURES.

The amount appropriated for the National Museum for the current fiscal year was \$233,000. The total expenditures under this appropriation aggregated \$227,473.54, leaving a gross balance of \$5,526.46. From the appropriations for the previous fiscal year expenditures to the amount of \$10,492.95 were made, leaving a balance (subject to liabilities) of \$391.76.

The appropriations for the fiscal year just ended were \$25,275 in excess of those for the preceding year, there being an increase of \$6,775 in the amount appropriated for the preservation of collections, an increase of \$1,000 for heating and lighting, an increase of \$15,000 in the amount allotted for furniture and fixtures (to be used for the construction of cases, etc., for the new galleries), and an appropriation of \$2,500 for removing and rebuilding storage sheds. It may be remarked that the amount allotted for the preservation of collections fell short of the estimate to the extent of \$20,000, and that the appropriation for heating and lighting was \$1,000 below the estimate; also that the sum asked for to be used in repairs to buildings was cut down one-half, the amount provided being only \$4,000. The sum of \$18,000 was requested for printing and binding, but only \$12,000 was appropriated.

The following tables show the expenditures from the various appropriations during the year and the amounts on hand June 30, 1898.

Appropriations and expenditures for the fiscal year ending June 30, 1898.

Object.	Appropriations.	Expenditures.	Balance on hand June 30, 1898.
Preservation of collections	\$160,000.00	\$157,636.49	\$2,363.51
Furniture and fixtures	30,000.00	28,289.54	1,710.46
Heating, lighting, and electrical service.....	14,000.00	13,183.13	816.87
Postage	500.00	500.00
Building repairs	4,000.00	3,968.02	31.98
Rent of workshops.....	2,000.00	1,999.92	.08
Galleries.....	8,000.00	7,448.13	551.87
Rebuilding sheds	2,500.00	2,471.10	28.90
Printing	12,000.00	11,977.21	22.79
Total.....	233,000.00	227,473.54	5,526.46

Disbursements from unexpended balances of appropriations for the fiscal year ending June 30, 1897.

Object.	Balance June 30, 1897.	Expenditures.	Balance June 30, 1898.
Preservation of collections.....	\$4,201.93	\$3,821.94	\$379.99
Furniture and fixtures	1,801.07	1,792.77	8.30
Heating and lighting.....	742.11	739.27	2.84
Building repairs	115.25	114.67	.58
Galleries	4,024.35	4,024.30	.05
Total.....	10,884.71	10,492.95	391.76

The unexpended balances of appropriations for the fiscal year 1895-96 remain the same as at the close of the last fiscal year, and are as follows: Preservation of collections, \$1.32; furniture and fixtures, \$0.20; heating and lighting, \$0.42; building repairs, \$1.38. No further claims having been presented against these appropriations, the balances will revert into the Treasury, to be carried to the credit of the surplus fund, under the provisions of section 3090 of the Revised Statutes.

The following statement concerning the estimates for appropriations for the fiscal year ending June 30, 1899, is quoted from the report of the acting chief clerk, Mr. J. L. Willige:

In October estimates were prepared of the appropriations required for the maintenance of the National Museum during the fiscal year ending June 30, 1899. In addition to the regular appropriations for furniture and fixtures, heating and lighting, preservation and increase of collections, building repairs, rent of workshops, postage, and printing and binding, the following special appropriations were requested: For illustrations for Museum publications, \$5,000; for the purchase of books, pamphlets, and periodicals for reference, \$2,000; for the continuation of the construction of galleries in the Museum building, the building of skylights in the four courts, and the erection of a ventilator upon the roof of the lecture hall, \$10,000; for the erection of a fireproof building for workshop and storage purposes, \$50,000; for the purchase of the herbarium of the late M. S. Bebb, of Rockford, Illinois, \$5,000; for the purchase of the library of the late G. Brown Goode, \$5,000.

An increase of \$20,000 was requested in the estimates for the coming fiscal year for the preservation, exhibition, and increase of the Museum collections. The importance of the grant of this additional sum for the purpose of developing the Department of Geology and expanding it in the direction of a museum of practical geology and to enable substantial increases to be made in the compensation of the higher grades of assistants in the Museum was strongly urged upon Congress.

The latest conference report on the sundry civil bill states the item at \$165,000, an increase of \$5,000 over the appropriation for 1898.

In the estimates for appropriations for the coming fiscal year is an item of \$15,000 for heating and lighting, being \$1,000 in excess of the current appropriation.

In view of the considerable sum of money paid from year to year by the Museum for the preparation of drawings for use in the Museum publications, it was endeavored to have a specific appropriation of \$5,000 provided for the purpose. It was explained that this item of expenditure is an important one in carrying out the policy of disseminating information regarding the Government collections among educational institutions throughout the country, and the hope expressed that it would not be necessary to continue the cost of illustrations as a charge upon the appropriation for the preservation, exhibition, and increase of the Museum collections. The sundry civil bill, while not, however, containing a specific appropriation for drawings, authorizes the expenditure for this purpose, from the preservation of collections appropriation, of a sum not exceeding \$5,500.

In the estimates submitted to Congress for the coming fiscal year is an item of \$17,000 for printing the Bulletins and Proceedings and labels and blanks for the National Museum, and binding books and pamphlets for the Museum library. It is urged that the entire sum asked be appropriated, in order that an edition of the Museum publications large enough to supply the principal scientific and educational establishments may be assured.

The sundry civil bill had not become a law at the close of the fiscal year, but the appropriations for the year ending June 30, 1899, as agreed to by the conferees of the Senate and House of Representatives are as follows:¹

Furniture and fixtures (including \$20,000 for furnishing new galleries)	\$35,000
Heating and lighting	14,000
Preservation of collections	165,000
Purchase of books of reference	2,000
Building repairs	4,000

¹ The sundry civil bill, as finally passed, carried the appropriations indicated.

Rent of workshops and storage quarters	\$4, 500
Postage stamps	500
Galleries (including skylights and ventilator)	10, 000
Purchase of Goode library	5, 000
Printing and binding	17, 000
Total.....	257, 000

BUILDINGS.

In the acts of Congress approved June 11, 1896, and June 4, 1897, provision was made for the erection of iron galleries in the Museum building. Under these appropriations, amounting altogether to \$16,000, galleries have been erected in the four courts and in three of the halls of the building, thus increasing the exhibition space by 17,000 square feet.

During the fiscal year just closed the work of constructing the galleries has been under the direction of the Superintendent of the Library of Congress.

In the estimates submitted to Congress for appropriations for the coming fiscal year the sum of \$10,000 was asked for, to be used in erecting galleries connecting the courts with the adjoining halls, supplying railings, painting the ironwork about the galleries, and placing skylights above the courts. This item is included in the sundry civil bill as passed by both Houses of Congress and sent to the President for approval.

It was requested in the estimates for 1898-99 that provision be made for the construction of a special building adapted for workshops and for storage purposes. A preliminary plan for a building 50 feet front by 130 feet deep, to be entirely fireproof in its construction and corresponding in its materials and workmanship with the Museum building, was prepared and submitted. The cost of the proposed building was estimated at \$50,000. The Government reservation between the National and Army Medical museums, with frontage on B street south, was suggested as an advantageous site for the building. The proposition was not favorably acted upon by Congress, but, in addition to the \$2,000 customarily granted for the rental of a building for storage purposes, the sum of \$2,500 was appropriated for the rental of additional quarters in which to place the carpenter and cabinet shops and for the storage of the material contained in the wooden shops near the Fish Commission building.

The storage sheds south of the Smithsonian buildings were removed during the year. They had long been regarded as a source of danger to the main building in case of fire. Some sections of the sheds were removed to the yard of the storage building on Ninth street. The remaining serviceable material was used in the erection of a two-story workshop.

The wooden floors in two of the ranges were taken up and substantial concrete floors laid in their stead. Mahogany wall cases and

screens have been constructed and placed in position on several of the galleries.

In order to accommodate additional floor cases, the steam radiators in some of the exhibition halls have been raised to a convenient height and attached to the piers. Improvements in the water-supply system have also been made.

The walls in many of the halls and ranges and in two of the courts were painted during the year.

ACCESSIONS AND REGISTRATION.

The amount of material received during the year was unusually large, aggregating 457,096 specimens. These were embraced in 1,441 separate accession lots. In the division of insects alone 226,000 specimens were received, due to the acquisition of the Hubbard and Schwarz collection, which is specially referred to elsewhere. Large quantities of material were received by the Division of Mollusks and the Division of Paleontology, and there have been notable increases in the collections of the divisions of prehistoric archaeology, mammals, birds, and plants. The following tables show the number of specimens added to the various collections during the year and the total number of specimens in each collection on June 30, 1898:

Number of specimens received in 1897-98.

Anthropology:	
Ethnology	14,528
Historic archaeology	1
Prehistoric archaeology	27,335
Technology	304
Graphic arts	328
Medicine	746
Religions	81
History and biography	1,366
Biology:	
Mammals	5,762
Birds	8,211
Birds' eggs	1,545
Reptiles and batrachians	1,345
Fishes	600
Mollusks	91,657
Insects	226,236
Marine invertebrates	2,612
Helminthological collection	2247
Comparative anatomy	96
Plants	49,508
Geology:	
Physical and chemical geology	1,105
Mineralogy	410
Stratigraphic paleontology	33,073
Total	457,096

¹ Including 2,206 specimens relating to physical anthropology.

² Number of catalogue entries.

Number of specimens in the Divisions of the Museum June 30, 1898.

Anthropology:	
Ethnology	¹ 451,655
Historic archaeology	1,872
Prehistoric archaeology	276,540
Technology	30,421
Graphic arts	7,234
Medicine	7,000
Religions	1,858
History and biography	36,156
Biology:	
Mammals	² 21,985
Birds	112,274
Birds' eggs	64,272
Reptiles and batrachians	38,122
Fishes	150,600
Mollusks	725,036
Insects	869,236
Marine invertebrates	510,765
Helminthological collection	³ 4,746
Comparative anatomy	15,491
Plants	368,241
Forestry	749
Geology:	
Physical and chemical geology	77,662
Mineralogy	29,308
Stratigraphic paleontology	355,185
Total	4,156,408

NOTE.—The Division of Ethnology embraces the ethnological and pueblo collections of 1896-97; the Division of Historic Archaeology, a portion of the collection of oriental antiquities and religious ceremonials; the Division of Technology, the collections relating to transportation and engineering, naval architecture, physical apparatus, electricity, musical instruments, pottery and porcelain, paints and dyes, oils and gums, chemical products, animal products, foods, fisheries, textiles, domestic animals; the Division of Graphic Arts, the collections of graphic arts and photographs; the Division of Religions, a portion of the collections of oriental antiquities and religious ceremonials.

More than 27,000 entries have been made in the catalogues of the various divisions.

A complete list of the specimens acquired during the year by gift, deposit, exchange, and purchase will be found in Appendix II.

¹ Including a series of specimens relating to physical anthropology received during the fiscal year ending June 30, 1898.

² Including those specimens which were added to the Department of Agriculture collection during 1897-98.

³ Number of catalogue entries.

The number of accessions during each year since 1881 is shown in the following table:

Year.	Accession numbers (inclusive).	Number 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
1886.....	16209-17704	1, 496
1887.....	17705-19350	1, 646
1888.....	19351-20831	1, 481
1889.....	20832-22178	1, 347
1890.....	22179-23340	1, 162
1891.....	23341-24527	1, 187
1892.....	24528-25884	1, 357
1893.....	25885-27150	1, 266
1894.....	27151-28311	1, 161
1895.....	28312-29534	1, 223
1896.....	29535-30833	1, 299
1897.....	30834-32300	1, 467
1898.....	32301-33741	1, 441

During the year, 25,405 packages were received by the Registrar. Of this number, 690 contained specimens for the Museum collections (an increase of 79 over the record for the previous year), 1,724 contained supplies of various kinds for use in the offices and shops of the Museum, and 11,522 consisted of publications. Three thousand and seventy-three packages were sent out.

The entries on the outgoing transportation record numbered 1,482 and on the incoming transportation record 3,137.

Seven carloads of material were shipped to the Trans-Mississippi and International Exposition at Omaha.

Two hundred and twenty-one packages were placed in storage and 57 were withdrawn.

DISTRIBUTION AND EXCHANGES.

Thirty-two thousand three hundred and sixty-three specimens were sent out as gifts or in exchange, and 7,461 specimens were lent for study during the year. A number of sets of marine invertebrates have been prepared with a special view to supplying the needs of schools, and these have been distributed to the number of about 17,000 specimens. Many collections of rocks and ores and casts of prehistoric implements were also presented to educational establishments.

A complete list of the distributions of the year is printed in Appendix III.

The following statement, arranged geographically, shows the number of "lots" of specimens sent out:

Alabama	1	South Carolina	3
Arkansas	1	Tennessee	1
California	15	Texas	3
Colorado	4	Utah	2
Connecticut	4	Vermont	1
Delaware	3	Virginia	3
District of Columbia	15	Washington	2
Florida	1	Wisconsin	6
Georgia	3	Wyoming	1
Illinois	15	Foreign countries:	
Indiana	4	Africa	2
Iowa	23	Argentina	1
Kansas	4	Australia	1
Kentucky	1	Austria	2
Louisiana	1	Canada	3
Maine	7	Denmark	1
Maryland	5	England	10
Massachusetts	30	France	4
Michigan	3	Germany	4
Minnesota	3	India	2
Missouri	6	Italy	1
Montana	1	Japan	2
Nebraska	4	Netherlands	2
New Hampshire	1	Norway	1
New Jersey	1	Russia	3
New York	42	Scotland	1
North Carolina	5	Sweden	2
Ohio	4	Switzerland	1
Oregon	1		
Pennsylvania	14	Total	288
Rhode Island	1		

Several exchanges have been conducted with institutions and individuals in foreign countries, resulting in the acquisition of some valuable material.

It is questionable whether this branch of the Museum work is taken as a whole year by year, very profitable. It is difficult to arrange satisfactorily the details of an exchange with an establishment several thousands of miles away. The necessity of determining one uncertain point may cause a delay of several months, during which time other opportunities for utilizing the material intended for exchange may have arisen. Valuations placed on specimens vary, and what may seem to us a generous offer on our part may be regarded as far from being an equivalent to the other party. In certain cases it is impossible to furnish first class specimens, and the failure to do so, although explanation may have been made in the correspondence leading to the exchange, has not unfrequently placed this Museum in an undesirable and undeserved position. Furthermore, it seldom happens that the establishment with which an exchange is being conducted is willing to part with its best material, especially if sending first. Specimens which

were in good condition when shipped often deteriorate before reaching their destination, and this again furnishes ground for dissatisfaction.

It is not likely, however, that transactions with establishments and individuals who have been exchanging material with this Museum, to the satisfaction of both, will be discontinued, although it is doubtful whether special pains will be taken to extend negotiations of this character into untried fields.

A number of exchanges which have been pending for special reasons were completed during the year just closed. Among the most important transactions the following may be mentioned:

From the Imperial Royal Natural History Museum, Vienna, Austria, 66 specimens of Tertiary corals were received in exchange for Lower Cretaceous fossils. The Paleontological Museum of the Royal Academy, Munich, Bavaria, received from the U. S. National Museum 16 specimens of Cambrian fossils, in exchange for material sent some time ago. Thirty-three specimens of fossil plants, representing 20 species, were received from the Natural History Society of New Brunswick, St. John, and 90 specimens of fossil plants have been sent in return. The Branicki Museum, Warsaw, Russia, has received 170 bird skins from the National Museum, in continuation of exchanges. Land shells from Transcaspia and the Caucasus and marine shells from the coast of Russia have been received from the Zoological Museum of the Imperial Academy of Sciences, St. Petersburg, in exchange for about 2,000 specimens of shells from the National Museum. Mons. M. Cossmann, Paris, France, sent a collection of shells in exchange for publications. Sixty-two specimens of Actinians have been transmitted to the Royal Museum of Natural History, Stockholm, Sweden, in exchange for material yet to be forwarded. Crustaceans have been sent to the Museum of Natural History, Geneva, Switzerland, in return for specimens already received and in continuation of exchanges.

Mr. T. Wayland Vaughan, of the U. S. Geological Survey, was authorized to arrange exchanges with several foreign museums during his visit to Europe in the summer of 1897. He made an especial effort to obtain corals from the Cretaceous and Tertiary formations of Europe. Series of specimens have already been received from the Geological-Paleontological Institute, Munich, Bavaria, and the Geological Society of London; also from the Imperial Royal Natural History Museum, Vienna, as stated above.

LABELS.

Ninety-eight requisitions were received from the various divisions of the Museum during the year. Twelve of these were sent to the Government Printing Office to be filled, namely, requisitions for binding 482 books; for printing 3,958 labels, representing 197 forms, for printing 700 specifications for supplies; for binding 13 volumes of vouchers; for 500 manila pads, and 9 record books. There were printed at the Museum 209,205 labels (representing 6,640 forms), of which 48,998 (representing 3,902 forms) were for use in connection with the Trans-

Mississippi and International Exposition. More than 160,000 letter heads, envelopes, circulars, blanks, etc., representing 68 forms, were also printed.

VISITORS.

There were 276,527 visitors to the Smithsonian and Museum buildings during the year. The following tables show respectively the number of visitors during each month of the fiscal year just closed, and the total number during each year since the Museum building was opened in 1881:

Number of visitors during the fiscal year 1898.

Year and month.	Museum building.	Smithsonian building.
1897.		
July	13,827	6,019
August	14,827	6,347
September	15,500	7,704
October	14,800	7,105
November	13,018	7,668
December	13,236	8,154
1898.		
January	11,908	6,281
February	13,214	7,519
March	18,294	10,453
April	21,310	13,929
May	15,910	10,694
June	11,410	7,400
Total	177,254	99,273
Approximate daily average on a basis of 313 days in the year	566	317

Number of visitors to the Museum and Smithsonian buildings since the opening of the former in 1881.

Year.	Museum building.	Smithsonian building.	Total to both buildings.
1881	150,000	100,000	250,000
1882	167,455	152,744	320,199
1883	202,188	104,823	307,011
1884 (half year)	97,661	45,565	143,226
1884-85 ¹	205,026	105,993	311,019
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 ¹	374,843	149,618	524,461
1889-90	274,324	120,894	395,218
1890-91	286,426	111,669	398,095
1891-92	269,825	114,817	384,642
1892-93 ¹	319,930	174,188	494,118
1893-94	195,748	103,910	299,658
1894-95	201,744	105,658	307,402
1895-96	180,505	103,650	284,155
1896-97 ¹	229,606	115,709	345,315
1897-98	177,254	99,273	276,527
Total	3,972,987	1,998,886	5,971,873

¹ Years of Presidential inaugurations.

STUDENTS AND INVESTIGATORS.

During the year covered by this report the following persons have been accorded access to the collections in the Museum:

Mr. E. W. Nelson, of the Department of Agriculture, has spent much time in the study of Eskimo collections and has completed a monograph on the subject. Mr. P. C. Boyle, of Oil City, Pennsylvania, studied the collection of lamps and illuminating devices. Mr. Stewart Culin, Director of the Museum of Archaeology and Palaeontology, University of Pennsylvania, has had access to the collections of games in connection with the preparation of a paper. Mr. J. D. McGuire, of Ellicott City, Maryland, has continued his work upon the pipes of the American aborigines. The results of his investigations have been embodied in a paper which will appear in the Report of the Museum for 1897 (now in press). Major J. W. Powell, Director of the Bureau of American Ethnology, examined the pipes collected by himself in Utah many years ago. Dr. J. Walter Fewkes has prosecuted investigations upon the material which he recently collected in the Southwest, and has prepared a report upon his explorations during 1897-98. In the Division of Historic Archaeology information has been given to the following: Mr. Richard Fisher, San Antonio, Texas; Mr. F. W. Hodg , Bureau of Ethnology; Hon. Oscar Straus, Mr. George W. Moon, London, England; and Prof. H. Hyvernat, of the Catholic University, Washington.

Prof. James Hine, of the Ohio State University, consulted the Museum collection of Neuroptera. Mr. Arthur C. Bradley, of Newport, New Hampshire, examined the Noctuid  for the purpose of identifying specimens collected in New Hampshire. Mr. Nathan Banks, of the Department of Agriculture, has frequently examined the Arachnida and allied classes for purposes of study and identification. Prof. Roland Thaxter, of Harvard University, spent several days during March examining the collection of Coleoptera for minute fungi found growing on their elytra. He secured some very rare species from the exotic beetles. Professor Thaxter is engaged in monographing this group of fungi (the Laboulbeniace ). Mrs. Annie T. Slosson and Doctor Prime, of Franconia, New Hampshire; Mr. O. W. Barrett, of Clarendon, Vermont; Dr. J. W. Holland, of Pittsburg, Pennsylvania; Dr. H. G. Griffith and Mr. William J. Fox, of Philadelphia; Prof. F. M. Webster, of Wooster, Ohio; and many others have consulted the collections in the Division of Insects during the year.

Mr. E. W. Nelson, Department of Agriculture, spent three months or more studying the Museum collection of Mexican birds in connection with the determination of the material collected by him in Mexico for the Biological Survey. Mr. H. C. Oberholser, Department of Agriculture, studied the Horned Larks, with a view to revising the group; the forms of *Thryothorus bewicki*, with a view to the prep-

aration of a revision of the group; the series of *Amazilia cervini-ventris*, in order to determine the distribution of a new form; the series of *Megascops flammeolus*, for the purpose of determining the forms embraced under that name; also two small collections of birds from West Africa. Dr. A. K. Fisher, Department of Agriculture, examined the collection at various times in connection with his determination of certain type specimens and the identification of material for the Biological Survey. Mr. Outram Bangs, of Boston, Massachusetts, made use of the Museum collection in identifying a series of 700 birds from the Santa Marta region of Colombia. Mr. J. W. Garrett, of Baltimore, Maryland, consulted the library preparatory to identifying a collection of Patagonian birds. Mr. F. M. Chapman, of the American Museum of Natural History, New York, studied the petrels, in order to determine the validity of a Pacific coast form. Mrs. George C. Maynard and Miss Florence Merriam, both of Washington, examined certain North American birds, for the purpose of describing them in popular works on birds.

Miss Jennie E. Letson, of Buffalo, New York, devoted considerable time to the study of mollusks. Mr. Outram Bangs spent a few days in March, and again in May, making comparisons of North American species of mammals. Professor Mitsukuri, of the University of Tokyo, studied the collection of seals, in order to familiarize himself with their taxonomic character. Mr. E. W. Nelson, of the Department of Agriculture, was given facilities for an extended study of the squirrels of Mexico and Central America. Mr. George R. Wieland, State College, Pennsylvania, examined specimens of marine and fresh-water turtles. Dr. David S. Jordan, president of the Leland Stanford Junior University, examined fishes in connection with a report upon the investigations of the Fur Seal Commission, and in connection also with the preparation of additional volumes of the work on the "Fishes of North and Middle America."¹ Dr. B. W. Evermann, who is associated with Doctor Jordan as joint author of the above work, also made frequent use of the collections. Dr. H. M. Smith and Dr. W. C. Kendall, of the U. S. Fish Commission, compared specimens of fishes in the collection with others recently obtained by the Commission.

Miss Harriet Richardson made a study of certain groups of Isopoda, including species of the genera *Rocinela* and *Æga*, and is preparing an annotated list of the Isopoda of the west coast of North America. In November Prof. K. Mitsukuri, of the University of Tokyo, spent about a week at the Museum studying the Holothuroidea obtained during the cruise of the *Albatross* to the Galapagos Islands in 1891. In February, Mr. K. Kishinouye, of Tokyo, was engaged for two weeks in studying the Medusæ and the Penæidæ. Since early in May Dr. Charles M. Blackford, jr., of the Medical College of Georgia, has been engaged in studying the Protozoa and other low forms of life.

Miss Anna Murray Vail, of the Torrey Botanical Club, New York

¹ Bulletin 47, U. S. National Museum.

City, spent a few days at the Herbarium in individual work on the Asclepiadaceæ, which she is engaged in monographing. Dr. John K. Small, curator of the Herbarium of Columbia University, New York City, consulted the Herbarium frequently during a short visit to Washington in August, and in connection with his work he greatly assisted the Museum by making a number of critical determinations. Mr. C. H. Thompson, of the Missouri Botanical Gardens, St. Louis, was engaged for a few days in the study of Lemnaceæ. Prof. L. M. Underwood, Columbia University, New York, visited the Herbarium in November and studied the Pteridophyta. Prof. E. L. Greene, of the Catholic University, Washington, frequently consulted the collection. He has made many valuable suggestions, and has generously placed his library at the disposal of members of the Museum staff. Through the opportunity thus afforded of studying certain works not to be found elsewhere in the city, the members of the staff have been materially aided in certain lines of investigation. Mr. William Canby, of Wilmington, Delaware, made several visits to the Herbarium, and has contributed some valuable plants. Mr. Canby has long been a correspondent of the Museum, and has added many rare plants to the collection. Mr. Hermann von Schrenk, of the Missouri Botanical Gardens, spent a short time at the Herbarium in June. Prof. F. A. Waugh, of the University of Vermont, examined certain specimens. Professor Ruth of the University of Tennessee inspected the arrangements in the Herbarium.

In the Division of Stratigraphic Paleontology many visitors have requested the privilege of examining specimens, and their wishes have been acceded to whenever practicable. Dr. E. C. E. Lord, of the U. S. Geological Survey, and Dr. Thomas L. Watson, of Cornell University, Ithaca, New York, studied the collections in the Division of Geology. Prof. O. P. Hay has examined the large Cretaceous fishes from Kansas with a view to deciding certain points in the structure of the skull and vertebral column, and also to ascertain whether or not the genus *Porthenus* is synonymous with *Xiphactinas*. Several new points in the structure and affinities of *Xiphactinas* were ascertained and the conclusion reached that *Xiphactinas* Leidy was identical with *Porthenus* Cope, the latter name being a synonym. Prof. Henry F. Osborn studied the types of such species of *Coryphodon* as are contained in the collections, with the intention of making a revision of the species of that genus.

On January 7, 1898, Miss Mary Bartlett Smith was given permission to serve as volunteer assistant in the Division of Marine Invertebrates.

The privilege granted to visitors to the Smithsonian and Museum buildings of photographing and sketching objects in the exhibition halls has been availed of by a large number of persons. Many classes from the public and private schools of Washington visited the Museum

during the year, and pupils from a number of schools outside of Washington also inspected the collections.

It may be stated here that permission can not be granted to photograph objects on deposit and not the property of the Museum, until the written consent of the owners has been obtained, nor can prints from Museum negatives be furnished in such cases without the consent of the owners.

Material has been sent out for examination as follows:

Objects of pottery, jade and serpentine axes and ornaments, ceremonial axes, banner stones, and drilled and figured tablets were sent to Mr. F. H. Cushing, Bureau of Ethnology. Bone gaming implements were transmitted to Mr. Stewart Culin, of the University of Pennsylvania, for use in the preparation of a paper on games. A collection of games from the Philippine Islands was also sent. A series of Ute pipes was lent to Maj. J. W. Powell, Director of the Bureau of Ethnology.

From the Division of Fishes the following material has been sent out for study: To Dr. D. S. Jordan, Leland Stanford Junior University, California, specimens of *Sebastes marinus*, *Sebastolobus alascanus*, certain species of the genera *Zeus*, *Chaetodon*, *Holocentrus*, and *Ammodytes*, and a small collection of fishes made near the Commander Islands in 1897, by Dr. Leonhard Stejneger; to the Museum of Comparative Zoology, Cambridge, Massachusetts, at the request of Professor Garman, two specimens of *Phycis regius*; to Dr. T. H. Bean, specimens of *Pantosteus plebeius*; to Dr. C. H. Eigenmann, Indiana University, Indianapolis, Indiana, specimens for study in the preparation of a review of the blind fishes; to S. Watase, Chicago, specimens of phosphorescent fishes, for study in connection with the preparation of a paper upon the phosphorescent organs of animals.

Frequent use of the collection in the Division of Mammals has been made by specialists of the Department of Agriculture, and a number of specimens were borrowed, including types of *Reithrodon montanus*, *Perognathus monticola*, *P. californicus*, *Microtus edax*, *M. californicus*, *Peromyscus boylii penicillatus*, *Hesperomys melanophrys*, *Perognathus penicillatus*, and *P. spinatus*. There were sent to Mr. Outram Bangs, Boston, Massachusetts, 5 skulls of certain species of *Putorius* and 5 skulls of species of *Erethizon*; to Mr. S. N. Rhoads, Academy of Natural Sciences, 7 skulls of mammals; to R. Lydekker, Harpenden, Hertfordshire, England, 1 deer skull; to Dr. E. A. Mearns, Fort Clark, Texas, 457 rodents from the Mexican boundary; to Mr. L. McNally, 1 muskrat; to Dr. J. A. Allen, American Museum of Natural History, New York City, 196 red squirrels, and to Mr. J. D. Sornborger, Cambridge, Massachusetts, 1 white-footed mouse. The specimens sent to Dr. Mearns were for use in completing his report on the mammals of the Mexican boundary, and those to Dr. Allen for use in a revision of the red squirrels.

From the Division of Birds there were sent to Mr. Joseph Grinnell, Pasadena, California, 24 specimens of *Spizus tristis*, to enable him to determine the forms inhabiting California, 32 specimens of *Salpinctes obsoletus*, for use in determining the identity of a form inhabiting the islands off California, and 22 specimens of *Harporhynchus*; to Mr. Witmer Stone, Academy of Natural Sciences, Philadelphia, 25 specimens of *Calidris arenaria*, for use in connection with investigations relating to the molting of birds; to Mr. F. M. Chapman, American Museum of Natural History, New York, 7 specimens of *Carpodacus mexicanus*, for use in the determination of a form collected by him in Mexico, 1 specimen of Kirtland's Warbler, and 42 specimens of Seaside Sparrows, for examination with a view to determining the different forms; to Prof. Alfred Newton, Cambridge, England, 1 specimen of *Phaornis* for examination; to Edwin Sheppard, Academy of Natural Sciences, Philadelphia, Pennsylvania, 12 specimens of ducks and geese in down, to be used in preparing illustrations for a work by Professor Elliott; to Dr. E. A. Mearns, Fort Clark, Texas, 96 Canyon Wrens, for use in a study of these birds, and to Mr. O. W. Knight, Bangor, Maine, 8 specimens of *Cistothorus stellaris*, for examination.

From the Division of Reptiles and Batrachians, thirty-four specimens of frogs were sent to Mr. Reginald Heber Howe, Museum of Comparative Zoology, Cambridge, Massachusetts, for examination in connection with his forthcoming paper on the Wood Frogs of North America.

From the Division of Insects the following material has been lent: To Prof. William Beutenmüller, American Museum of Natural History, New York City, 8 specimens of Sessiidae, for use in a revision of this family; to Mr. John Hartley Durrant, Merton Hall, Thetford, England, 7 Tineids, required by Lord Walsingham in his revision of the Tineidae; to Mr. H. C. Fall, Pasadena, California, all the material in the genus *Aemodera*, for the purpose of drawing up a synopsis of the species; to William J. Fox, Academy of Natural Sciences, Philadelphia, material for use in monographing the family Mutillidae; to Prof. James S. Hine, Ohio State University, Columbus, Ohio, material in the genus *Bittacus*, for formulating a synopsis of the species; to Dr. George D. Hulst, 15 Himrod street, Brooklyn, New York, 284 specimens belonging to the family Geometridae, for determination; to Dr. R. Ottolengui, 4 species of *Plusia*; and to Prof. John B. Smith, New Brunswick, New Jersey, 168 Noctuidae, for study and identification.

The following material has been sent out from the division of marine invertebrates: To Dr. F. Meinert, Zoological Museum, Copenhagen, the general collection of Pycnogonida, for the purpose of monographing the group; to Prof. F. H. Herrick, Adelbert College, Cleveland, Ohio, the general collection of Alpheidae, to be used also in monographic work; to Dr. David S. Jordan, Stanford University, California, the compound ascidians collected at the Commander Islands by Doctor Stejneger, to be transmitted to Dr. William E. Ritter, who is making a special

study of the compound ascidians of the North Pacific. Dr. Walter Faxon, Museum of Comparative Zoology, Cambridge, Massachusetts, asked for the loan of three crayfishes, for use in the preparation of a paper, which was afterwards published in the Proceedings of the National Museum. A specimen of *Lithodes aquispinus* Benedict was also sent to Doctor Faxon for comparison with Japanese specimens. Seven lots of crabs, for use in a report on the Crustacea of the western coast of the United States, were sent to Mr. S. J. Holmes, Chicago, Illinois.

From the Division of Plants, the following material has been lent: To Mr. W. W. Ashe, State Geological Survey, Raleigh, North Carolina, 67 specimens of *Asarum*; to Prof. L. H. Bailey, Cornell University, Ithaca, New York, 385 specimens of *Rubus* and 1 specimen of *Carex*; to Mr. C. D. Beadle, Biltmore, North Carolina, 68 specimens of *Philadelphus*; to Mr. T. S. Brandegee, San Diego, California, 1 specimen of *Cereus alamosensis*, and 8 specimens of *Cacti*; to Dr. N. L. Britton, Columbia University, New York City, 31 specimens of *Nabalus*, 1 specimen of *Lacinaria*, 1 specimen of *Eupatorium*, 638 specimens of *Asclepias*, 2 specimens of *Aster*, 35 specimens of *Ophioglossum*, and 77 specimens of *Viola*; to Mrs. E. G. Britton, Columbia University, New York City, 17 pockets of mosses; to Prof. E. S. Burgess, Normal College, New York City, 483 specimens of *Aster*; to Mr. George E. Davenport, Medford, Massachusetts, 69 specimens of Mexican plants and 2 specimens of ferns; to the director of the Royal Botanic Gardens, Kew, England, 54 specimens, mostly of *Eryngium*; to Mr. J. M. Greenman, Cambridge, Massachusetts, 92 Mexican plants, 49 specimens of *Galium* and *Relbunium*, and 373 specimens of Mexican compositæ; to Mr. A. J. Grout, Plymouth, New Hampshire, 199 specimens of *Eurhynchium*. Mr. Theodor Holm, Washington, District of Columbia, received for study 71 miscellaneous specimens of plants; Dr. C. F. Millsbaugh, Columbian Museum, Chicago, Illinois, 8 specimens of Mexican plants; L. H. Pammel, Ames, Iowa, 153 specimens of plants; Dr. B. L. Robinson, Gray Herbarium, Cambridge, Massachusetts, 3 specimens of *Anoda* and 157 specimens of other plants; Prof. W. W. Rowlee, Cornell University, Ithaca, New York, 124 specimens of *Salix*; Mr. C. S. Sargent, Jamaica Plain, Massachusetts, 2 specimens of *Populus*; Dr. John K. Small, Columbia University, New York City, 107 specimens of *Eriogonum*, 1 specimen of *Styrax*, 11 specimens of *Scutellaria*, and 7 specimens of *Cyrtopodium*; Prof. William Trelease, Missouri Botanical Gardens, St. Louis, Missouri, 138 specimens of *Lemna* and 268 specimens of *Croton*; Prof. L. M. Underwood, Columbia University, New York City, 8 specimens of fern allies and 15 sheets containing 34 pockets of *Riccia*.

A collection of fossils belonging to certain species of the Hamilton group, collected by Mr. C. Schuchert at Theford, Ontario, was sent to Prof. J. F. Whiteaves, Ottawa, Canada. Mr. Whiteaves is monographing the species of this locality. Some molars of *Coryphodon* were sent to Prof. Henry L. Osborn to aid in his revision of the species of the

genus, and plates of *Dinichthys pustulosus* were lent to Dr. C. R. Eastman of the Museum of Comparative Zoology, Cambridge, Massachusetts. English Carboniferous pelecypods were sent to Dr. G. H. Girty of the U. S. Geological Survey. A collection of thin sections of slates was lent to Prof. T. Nelson Dale, Williamstown, Mass.

In the foregoing paragraphs allusion is made only to specimens sent in response to special applications. In addition, a large number of sets of marine invertebrates, minerals, rocks and ores, etc., have been distributed among educational establishments desiring such material both for study and exhibition. In this connection it may be stated that very few of these collections are left, and unless special provision be soon made by Congress which will enable the Museum to engage the services of competent assistants to select the duplicate specimens from the various collections and make them up into sets, that branch of Museum work will have to be practically suspended. It is quite impossible for the present force of assistants in the scientific divisions to leave their regular duties for special work of this character, which, while very desirable and intended to be helpful to other museums, colleges, etc., has in it no element of gain whatever to the National Museum.

COOPERATION OF THE EXECUTIVE DEPARTMENTS OF THE GOVERNMENT.

The cooperation of the various Executive Departments and Bureaus of the Government has continued during the year, and has resulted, as usual, in the addition to the collections of valuable and interesting material. This is especially so in the case of the U. S. Geological Survey, the U. S. Fish Commission, and the Department of Agriculture. The Museum not only benefits largely by the law providing that all Government collections shall be turned over to it after they have served the purpose for which they were obtained, but it also profits materially by the hearty cooperation and courtesy so frequently manifested by Government officials. A statement of the material transmitted by the various Departments will be found in the Accession List (Appendix II). The collections of particular interest are also referred to by the head curators in their annual reports.

Especial mention should be made of the valuable services rendered without remuneration by many of the members of the scientific staff of the Museum. There are now thirteen curators, one assistant curator, and fifteen custodians who serve the Museum without pay. The majority of these are in the employ of other Departments or Bureaus of the Government, but have willingly given to the Museum such time and attention as could be spared from their regular official duties. There are also two collaborators, three associates in zoology, and one in paleontology who are attached to the staff in an honorary capacity.

IDENTIFICATION OF SPECIMENS AND INFORMATION FURNISHED.

During the year 576 "lots" of specimens (Nos. 4494-5069, inclusive) were received for examination from individuals and educational establishments in various sections of the country. Of this material the percentage which has been of sufficient interest for addition to the Museum collections is very small. This branch of the work yields little or no profit to the Museum, since the senders of valuable material almost invariably request its return. Moreover, the condition in which material is received is frequently a source of delay in securing prompt determinations. In many instances the specimens are almost entirely destroyed during transmittal, owing to insufficient packing.

Pamphlets describing the manner in which specimens of various kinds may best be collected and prepared for shipment have been widely distributed, and it is hoped that persons desiring to avail themselves of the facilities which the Museum affords in the identification of specimens will comply with the suggestions which they contain.

Technical information on various subjects has been furnished to a large number of correspondents during the year, and drawings or blue prints of Museum cases have been transmitted to those who have applied for them. There is hardly a day when from thirty to forty letters are not written in response to communications received from persons seeking definite knowledge of some kind.

PUBLICATIONS.

The Annual Report of the Museum for 1895 has been published, and the papers in the Appendix have also appeared in separate form. The Report for 1896 is now in type, with the exception of the index, and the proof reading of the administrative portion of the volume for 1897 has been completed.

Volume XIX of the Proceedings has been published. Most of the papers in this volume were issued in separate form during the preceding fiscal year. The last four, however, were published since July 1, 1897. Papers 1124-1139, inclusive, constituting Volume XX, have appeared.

The titles of all papers which have been published in separate form, during the year are given in Appendix v.

The text of Bulletin 47 is now all in type, with the exception of the "addenda." The work, when completed, will consist of three volumes and an atlas.

Another of the series of pamphlets containing directions for collecting and preserving natural history specimens has been issued.¹ This paper is by Prof. T. D. A. Cockerell, and contains instructions for the collection of scale insects. Circular 48, which has also been published,

¹ Bulletin 39, Part L.

relates to collecting and preserving the bones and teeth of specimens of Mastodon and Mammoth.

The titles of a large number of papers published during the year by officers of the Museum and other investigators are given in the Bibliography (Appendix IV). Many of these papers appeared in publications other than those of the Museum. The number of authors represented is 83, and the total number of papers mentioned, 234. The subjects treated upon are indicated in the following table:

Subject.	Papers by Museum officers.	Papers by other investigators.	Total.
Administration	1		1
Archæology	2		2
Bibliography	1		1
Biography	3		3
Biology	1		1
Birds	15	19	34
Birds' eggs	1	1	2
Botany	19		19
Comparative anatomy	1		1
Ethnology	7	4	11
Exploration	1		1
Fishes	6	6	12
Forestry	2		2
Fossils	11		11
General natural history	1		1
Geology	4		4
Insects	38	14	52
Mammals	9	4	13
Marine invertebrates	10	3	13
Mollusks	15	12	27
Parasites	12	5	17
Reptiles and batrachians	1		1
Taxidermy		1	1
Miscellaneous	4		4
Total	165	69	234

The Secretary of the Smithsonian Institution, in an order dated March 19, 1898, placed 5,800 copies of the Museum Report at the disposal of the Museum, retaining 1,200 copies, out of the edition of 7,000 allotted to both establishments, for distribution by the Institution itself. This increase enables the Museum to supply a large number of public libraries and schools which had not heretofore received the volume.

In the last Annual Report mention was made of an arrangement by which members of the scientific staff might, with the approval of the Secretary of the Smithsonian Institution, print papers based upon Museum material in publications other than those of the Museum. During the year permission has been given to publish sixteen papers in this way. The names of the authors are as follows: James E.

Benedict, Miss M. J. Rathbun, J. N. Rose, Gerrit S. Miller, jr., Walter Hough, Robert Ridgway, David White, Charles Schuchert, and Miss Harriet Richardson. The titles of those papers which have been published within the fiscal year will be found in the Bibliography (Appendix IV).

LIBRARY.

The librarian, Dr. Cyrus Adler, states that the accessions for the year were as follows: Books, 848; pamphlets, 1,945; parts of periodicals, 16,746; total, 19,539. These figures include the publications retained from the accessions to the library of the Smithsonian Institution, which were as follows: Books, 407; pamphlets, 1,148; parts of periodicals, 11,817. One thousand books belonging to the Smithsonian deposit and 409 belonging to the Museum were bound.

More than 10,000 books were borrowed during the year, a considerable proportion of these being assigned to sectional libraries. About 17,000 books were consulted in the library.

The work of transferring titles to the new catalogue is progressing.

Two new sectional libraries have been organized during the year—Technology and Stratigraphic Paleontology. There are now twenty-three authorized sectional libraries, as follows:

Administration,	Mesozoic fossils,
Birds,	Mineralogy,
Botany,	Mollusks,
Comparative anatomy,	Oriental antiquities,
Ethnology,	Paleobotany,
Fishes,	Parasites,
Geology,	Photography,
History,	Prehistoric archæology,
Insects,	Reptiles,
Mammals,	Stratigraphic paleontology,
Marine invertebrates,	Technology.
Medicine,	

EXPLORATIONS.

A quantity of valuable material has come into the possession of the Museum through explorations conducted by members of the Museum staff, by other individuals, and by various bureaus of the Government.

Dr. W. L. Abbott has sent in large collections of birds, mammals, reptiles, insects, and other animals collected by himself in lower Siam and Kashmir, thus very materially adding to the valuable series of specimens which have been received from him in past years.

Prof. Dean C. Worcester, of Ann Arbor, Michigan, contributed a large series of bird skins, eggs, and nests collected in the Philippine Islands.

An interesting series of bird skins collected in Santa Marta, Colombia, was received from Mr. Outram Bangs, Boston, Massachusetts.

The Biological Survey of the Department of Agriculture, the U. S. Fish Commission, and other Governmental bureaus have continued to

send in valuable collections obtained by their representatives in the field.

A large lot of invertebrates collected by the naturalists of the steamer *Albatross* in recent years on the coasts of California, Japan, and Kamchatka and in the Bering Sea should receive special notice.

A large series of land shells collected in Mexico by the Biological Survey constitutes an addition of more than ordinary value.

The expedition made by Mr. R. P. Currie in the neighborhood of Mount Coffee, Liberia, West Africa, under the auspices of the Museum and with the valuable assistance of Prof. O. F. Cook, of the Colonization Society, resulted in the acquisition of a large number of insects, spiders, and myriapods, numbering in all about 5,000 specimens, and some valuable reptiles, birds, and mammals. Dr. Leonhard Stejneger, while pursuing investigations on the Commander Islands as a member of the Fur Seal Commission, collected birds, insects and other animals for the Museum. Of the insects 28 were found to represent new species and others were very rare. Mr. Robert Ridgway made an exploration for the Museum in the vicinity of Lake Okechobee, Florida, and obtained a considerable number of rare birds.

Mr. J. N. Rose was engaged for four months in the summer and fall of 1897 in making a botanical collection in western and central Mexico. He visited a little known part of the country and succeeded in bringing back a large and valuable collection of plants. The collection includes more than 6,000 specimens and contains more than 100 species new to science. Mr. Rose also succeeded in obtaining some interesting ethnological specimens, including spinners, reels, etc., used by the natives in converting cotton and Agave fiber into thread, strings, and rope. This collection also includes native cups, spoons, mats, hats, ropes, etc. In each case botanical specimens were obtained which show definitely the origin of the products.

Early in March an opportunity was presented for a botanist to accompany an expedition to the Keys of south Florida, undertaken by Messrs. E. L. Morris and G. N. Collins for the purpose of making general scientific collections. Mr. Pollard was authorized by the Acting Assistant Secretary in charge of the Museum to accompany the expedition, leave of absence for two months on full pay being granted him on condition that the Museum receive a set of the botanical specimens obtained, and that it should not assume payment of transportation or other expenses. On March 4 Mr. Pollard proceeded directly with his companions to Key West; the party there engaged a boat and made a complete circuit of the Keys, reaching Miami, on the coast of Florida, April 5. After a week spent at the latter place, the expedition returned by steamer to Key West and thence to Washington. About 250 species of plants were obtained. These have since been determined by Mr. Pollard and will form the subject-matter of a report to be presented for publication at an early date.

Dr. F. W. True and Mr. D. W. Prentiss, jr., obtained natural history material, including about 80 specimens of reptiles and batrachians in Maine.

Dr. George P. Merrill, during his visit to Russia in the summer of 1897, collected some interesting geological material.

Mr. Charles Schuchert, assistant curator of the Division of Stratigraphic Paleontology, accompanied an expedition under the direction of Lieutenant Peary, U. S. N., in July, for the purpose of gathering fossils and other natural history material in the region of Noursoak Peninsula, Greenland, and with a view especially to obtaining specimens from the vicinity of Disko Island, to serve as a basis of comparison with related material gathered from the Cretaceous of the United States. Mr. David White, of the U. S. Geological Survey, accompanied Mr. Schuchert. A large collection of Cretaceous and Tertiary plants was secured; also some interesting specimens of fishes and mollusks.

About 1,300 specimens of pottery and other relics from the vicinity of Tucson, Arizona, have been received from Dr. J. W. Fewkes as a further result of his explorations in that region. Dr. Walter Hough, assistant curator of the Division of Ethnology, accompanied Dr. Fewkes in the summer of 1897.

A number of unique ethnological specimens obtained by Mr. J. B. Hatcher in Patagonia were received from the Bureau of Ethnology.

Material of great value obtained by the exploring parties of the Bureau of Ethnology has also been received.

Collectors' outfits.—Outfits have been furnished to the following persons, who have undertaken to collect material for the National Museum: Mr. Edward J. Brown, Lemon City, Florida; Mr. John G. Webb, Osprey, Florida; Rev. D. W. Snyder, for collecting in Africa; Dr. Edgar A. Mearns, U. S. A., Fort Clark, Texas; Hon. J. D. Mitchell, Victoria, Texas; Prof. A. E. Verrill, Yale College, New Haven, Connecticut; Mr. George D. Wilder, Pekin, China; Mr. J. A. Loring, Owego, New York, for collecting in European countries; Mr. J. S. Holmes, Bowman's Bluff, Henderson County, North Carolina.

Several members of the Museum staff have also been furnished with collecting outfits, as follows: Mr. Charles Schuchert, Mr. David White, Doctor F. W. True, Miss M. J. Rathbun, Mr. William Palmer, Dr. Walter Hough, and Mr. Robert Ridgway.

In addition to the collecting trips undertaken by members of the Museum staff, several of the curators and assistants were absent from time to time during the year on other business pertaining to the Museum. Some were temporarily in the employ of other departments or bureaus of the Government.

Thus Mr. F. A. Lucas was absent for several months during 1897, having been detailed by the President to visit Alaska as a member of the Fur Seal Commission. Dr. Stejneger was also a member of this

Commission. Mr. Barton A. Bean, assistant curator of fishes, was placed on detached service, with instructions to report on July 4 to the U. S. Fish Commission, to accompany in the capacity of temporary field assistant, a party sent out by the Commission for the purpose of conducting an examination of the fish fauna of the group of lakes lying east of the Klamath Lakes in southern Oregon. All necessary expenses in connection with Mr. Bean's trip were defrayed by the Commission. Dr. Thomas Wilson, curator of the Division of Prehistoric Archaeology, was requested, in connection with his duties as Commissioner from the Government of the United States to the International Exposition held at Brussels, Belgium, in 1897, to avail himself of the opportunities offered by his stay in Brussels to make excursions to points of archaeological interest within convenient reach of the Belgian capital, and to visit especially the newer anthropological museums of Belgium and Holland. He was directed to give particular attention to collecting information concerning the buildings occupied by these museums, the interior arrangements (exhibition halls, laboratories, storage facilities, etc.), and their methods of preparing, labeling, and installing specimens. He was also authorized to attend, as delegate from the Institution and Museum, any congresses or other scientific meetings relating to anthropology held in Brussels during the exposition.

In September Mr. J. E. Watkins, chief of buildings and superintendence, proceeded to New York City for the purpose of examining the exhibition cases in the American Museum of Natural History and the Metropolitan Museum of Art.

Prof. O. T. Mason, curator of the Division of Ethnology, visited Chicago in November for the purpose of examining the collections in the Field Columbian Museum.

On December 22 Mr. Charles Schuchert, assistant curator of the Division of Stratigraphic Paleontology, was directed to proceed to Waynesville, Ohio, for the purpose of representing the interests of the National Museum in the matter of shipping to Washington the collection of fossils and other specimens bequeathed to the Museum by the late Mr. I. H. Harris.

On February 25, 1898, Mr. Schuchert visited localities in New York, Ohio, Indiana, Illinois, Iowa, Kansas, Missouri, and Kentucky for the purpose of inspecting fossils in the hands of private collectors, with a view to completing the series to be exhibited at the Trans-Mississippi Exposition. He was directed to report upon the collections examined and make recommendations for the purchase of desirable material.

On April 16 Dr. Leonhard Stejneger, curator of the Division of Reptiles and Batrachians, proceeded to Philadelphia to examine collections at the residence of the late Prof. E. D. Cope, with a view to identifying specimens belonging to the Government but which had been temporarily in Professor Cope's hands for study. He was requested at the same time to avail himself of the opportunity offered by his presence in

Philadelphia to visit the Museum of the Academy of Natural Sciences for the purpose of arranging for the transmission to Washington of specimens belonging to the National Museum. Dr. A. C. Peale was also detailed to assist in this work.

On May 1 Dr. Stejneger left Washington for the purpose of visiting England and the continent of Europe, at his own expense, with a view to examining, in certain European museums, types of American species of reptiles and batrachians, and specimens of the birds and reptiles of Japan and of the north Pacific coast and adjacent islands. Dr. Stejneger attended the International Fisheries Exposition, which opened at Bergen, Norway, on May 16, with the expectation also of attending the Fourth International Zoological Congress, which convenes at Cambridge, England, on August 23. He was especially requested to secure information concerning new museum methods in northern Europe.

Mr. F. A. Lucas, acting assistant curator of Vertebrate Fossils, journeyed to New Haven on May 4 to receive from Prof. O. C. Marsh a number of fossil vertebrates for the Museum collection.

TAXIDERMY AND OSTEOLOGY.

Seventy-three mammals were received and skinned during the year. A considerable proportion of these came from the National Zoological Park, as shown in the following table:

Mammals received in the flesh.	From the Zoological Park.	From other sources.
Primates.....	6	1
Carnivora.....	13	2
Ungulata.....	10
Chiroptera.....	5
Rodentia.....	1	34
Marsupialia.....	1
Total.....	31	42

In addition, 35 other specimens were received and immediately turned over to other departments of the Museum.

Two large crocodiles were received from the Zoological Park. One of these was skinned and preserved for mounting. A skin of an elk was made up for the study series; also the skin of a kangaroo, the skeleton being taken out entire in each instance.

Sixty-eight skins were received, as follows:

Carnivora.....	21
Ungulata.....	2
Rodentia.....	44
Cetacea.....	1
Total.....	68

The following table shows the number of dry skins made up for the study series:

Primates	7
Carnivora	21
Ungulata	11
Chiroptera	5
Insectivora	5
Rodentia	79
Marsupialia	1
Total	129

A specimen of *Bassaricyon gabbii* was mounted.

Several hundred large skins, both dry and in pickle, are on hand. A large number of skulls of mammals were cleaned.

Improvements were made in the groups exhibited in the mammal hall as follows: The two caribou groups were overhauled and renovated, as were also the African monkey group and the sea-otter group. A large number of single specimens were cleaned. A group of humming birds was designed and arranged for the Division of Birds, and a large number of minor matters received attention.

Mr. William Palmer, chief taxidermist, was in Nashville for nearly a month, engaged in repacking portions of the exhibit sent by the Museum to the Tennessee Centennial Exposition. Considerable work was also done by Mr. Palmer in connection with the Trans-Mississippi and International Exposition at Omaha. The taxidermists' shop was removed to new quarters during the year.

In the Division of Birds the taxidermists have cleaned and renovated about 2,500 specimens, and have mounted or remounted a number of others, a portion of them being intended for exhibition at the Trans-Mississippi Exposition. A collection of birds which was exhibited at the Tennessee Centennial Exposition was overhauled upon its return.

Various causes have combined to prevent satisfactory progress in osteological work during the period covered by this report. Considerable work has been accomplished, however, under adverse circumstances, as shown by the following table:

	Mammals.	Birds.	Reptiles.	Fishes.	Total.
Received in the flesh:					
Entire skeletons	6	14	3		23
Cleaned:					
Entire skeletons	2	1	11		14
Incomplete skeletons		1			1
Skulls.....	1,276		2		1,278
Mounted:					
Entire skeletons	4	4		2	10
Incomplete skeletons	1				1
Skulls.....	6				6
Total.....	1,295	20	16	2	1,333

PHOTOGRAPHY.

Seven hundred and forty-six negatives, 790 platinum prints, 686 silver prints, and 62 cyanotypes have been made for the various departments in the Museum. The catalogue of negatives in the custody of the photographer, Mr. T. W. Smillie, has been completed; 9,650 blue prints having been made for this purpose during the year.

EXPOSITIONS.

Tennessee Centennial Exposition.—This exposition opened at Nashville on May 1, 1897, and continued until October 31. An appropriation of \$130,000 was made by Congress for the preparation of a Government exhibit, the sum of \$14,500 being allotted to the Smithsonian Institution and National Museum from this amount. A slight increase in the Smithsonian allotment was afterwards made. Collections were exhibited by the following divisions and sections of the Museum: Mammals, birds, reptiles and batrachians, fishes, mollusks, insects, marine invertebrates, comparative anatomy, paleontology, geology, minerals, ethnology, prehistoric archæology, religions, technology, electricity, historical collections, and medicine.

The Report of the Smithsonian Institution for the present fiscal year contains a full account of the participation in the exposition by the Institution and its various bureaus.

Trans-Mississippi and International Exposition.—The Trans-Mississippi and International Exposition opened at Omaha on June 1, 1898, and will continue for five months. An appropriation of \$50,000 for the erection of a Government building was made by Congress, and this amount was afterwards increased to \$60,000, with an additional appropriation of \$2,500 for the erection of a building for an exhibit by the Life-Saving Service. The sum of \$137,500 was appropriated for an exhibit by the Executive Departments, the Smithsonian Institution, including the National Museum, and the U. S. Fish Commission. Of this amount \$19,491.71 was allotted to the Smithsonian Institution and its bureaus.

Exhibits have been prepared by each of the three scientific departments of the Museum—anthropology, biology, and geology. The Department of Anthropology has sent series illustrative of fire-making and illumination, exploitative industries, domestic arts, ceramic art, metal working, sculpture, photography, land and marine transportation, and the progress in certain branches of electrical engineering; groups of life-sized figures representing people engaged in primitive arts; series of weapons, tools, and musical instruments, and objects showing the history of the development of bookmaking. The exhibit of the Department of Biology includes series of the lower invertebrates, mollusks, insects, fishes, reptiles and batrachians, birds, mammals, and aquatic plants. The geological exhibits include series prepared in the divisions

of physical and chemical geology, mineralogy and stratigraphic paleontology. Each of the sections of the last-named division (namely, paleobotany, vertebrate and invertebrate fossils) is represented.

International Fisheries Exposition at Bergen, Norway.—Exhibits from the fisheries collection in the National Museum were lent to the U. S. Fish Commission for use in connection with its exhibit at the International Fisheries Exposition which opened at Bergen in May, 1898.

International Exposition at Paris.—The sundry civil bill, making appropriations for the fiscal year ending June 30, 1899, contains an item providing for the participation of the United States in the International Exposition to be opened in Paris on the 15th day of April, 1900.

APPENDIX I.

THE MUSEUM STAFF.

[June 30, 1898.]

S. P. Langley, Secretary of the Smithsonian Institution, Keeper, Ex-Officio.
Charles D. Walcott, Acting Assistant Secretary of the Smithsonian Institution in charge of the U. S. National Museum.
Frederick W. True, Executive Curator.

SCIENTIFIC STAFF.

DEPARTMENT OF ANTHROPOLOGY:

W. H. Holmes, Head Curator.

- (a) *Division of Ethnology*: O. T. Mason, Curator; Walter Hough, Assistant Curator; F. H. Cushing, Collaborator; J. W. Fewkes, Collaborator.
- (b) *Division of Historic Archaeology*: Paul Haupt, Honorary Curator; Cyrus Adler, Honorary Assistant Curator; I. M. Casanowicz, Aid.
- (c) *Division of Prehistoric Archaeology*: Thomas Wilson, Curator.
- (d) *Division of Technology (Mechanical phases)*: J. E. Watkins, Curator.
Section of Electricity: G. C. Maynard, Custodian.
- (e) *Division of Graphic Arts*: S. R. Koehler, Honorary Curator.
Section of Photography: T. W. Smillie, Custodian.
- (f) *Division of Medicine*: J. M. Flint, U. S. N., Honorary Curator.
- (g) *Division of Religions*:
Section of Historic Religious Ceremonials; Cyrus Adler, Custodian.
- (h) *Division of History and Biography*:
Section of American History: A. H. Clark, Custodian; Paul Beckwith, Aid.

DEPARTMENT OF BIOLOGY:

Frederick W. True, Head Curator.

- (a) *Division of Mammals*: Frederick W. True, Acting Curator; G. S. Miller, jr., Assistant Curator.
- (b) *Division of Birds*: Robert Ridgway, Curator; Charles W. Richmond, Assistant Curator; J. H. Riley, Aid.
Section of Birds' Eggs: William L. Ralph, Custodian.
- (c) *Division of Reptiles and Batrachians*: Leonhard Stejneger, Curator.
- (d) *Division of Fishes*: Tarleton H. Bean, Honorary Curator; Barton A. Bean, Assistant Curator.
- (e) *Division of Mollusks*: William H. Dall, Honorary Curator; C. T. Simpson, Aid; Paul Bartsch, Aid.
- (f) *Division of Insects*: L. O. Howard, Honorary Curator; W. H. Ashmead, Assistant Curator; R. P. Currie, Aid.
Section of Hymenoptera: W. H. Ashmead, in charge.
Section of Myriapoda: O. F. Cook, Custodian.
Section of Diptera: D. W. Coquillett, Custodian.
Section of Coleopterous Larvæ: E. A. Schwarz, Custodian.
Section of Lepidoptera: Harrison G. Dyar, Custodian.

DEPARTMENT OF BIOLOGY—Continued.

- (g) *Division of Marine Invertebrates*: Richard Rathbun, Honorary Curator; J. E. Benedict, First Assistant Curator; M. J. Rathbun, Second Assistant Curator.

Section of Helminthological Collections; C. W. Stiles, Custodian.

- (h) *Division of Comparative Anatomy*: Frederic A. Lucas, Curator.
- (i) *Division of Plants (National Herbarium)*: Frederick V. Coville, Honorary Curator; J. N. Rose, Assistant Curator; C. L. Pollard, Assistant Curator; O. F. Cook, Assistant Curator; Miss Carrie Harrison, Aid.

Section of Forestry: B. E. Fernow, Honorary Curator.

Section of Algæ: W. T. Swingle, Custodian.

Section of Lower Fungi: D. G. Fairchild, Custodian.

Associates in Zoology (Honorary): Theodore N. Gill, C. Hart Merriam, R. E. C. Stearns.

DEPARTMENT OF GEOLOGY:

George P. Merrill, Head Curator.

- (a) *Division of Physical and Chemical Geology (Systematic and Applied)*: George P. Merrill, Curator; W. H. Newhall, Aid.
- (b) *Division of Mineralogy*: F. W. Clarke, Honorary Curator; Wirt Tassin, Assistant Curator; L. T. Chamberlain, Honorary Custodian of Gems and Precious Stones.
- (c) *Division of Stratigraphic Paleontology*: Charles D. Walcott, Honorary Curator; Charles Schuchert, Assistant Curator.

Section of Vertebrate Fossils: O. C. Marsh, Honorary Curator; F. A. Lucas, Acting Assistant Curator.

Section of Invertebrate Fossils: Paleozoic, Charles Schuchert, Custodian; Mesozoic, T. W. Stanton, Custodian; Cenozoic, W. H. Dall, Associate Curator.

Section of Paleobotany: Lester F. Ward, Associate Curator; F. H. Knowlton, Custodian of Mesozoic Plants; David White, Custodian of Paleozoic Plants.

Associate in Paleontology (Honorary): Charles A. White.

ADMINISTRATIVE STAFF.

Chief Clerk, W. V. Cox.

Chief of Buildings and Superintendence, J. E. Watkins.

Chief of Correspondence and Documents, R. I. Geare.

Photographer, T. W. Smillie.

Registrar, S. C. Brown.

Disbursing Clerk, W. W. Karr.

Property Clerk, W. A. Knowles (Acting).

Librarian, Cyrus Adler.

Assistant Librarian, N. P. Scudder.

Editor, Marcus Benjamin.

APPENDIX II.

LIST OF ACCESSIONS DURING THE YEAR ENDING JUNE 30, 1898.

[All accessions marked "N" and "O" indicate material obtained primarily for exhibition at the Nashville and Omaha expositions, respectively.]

- ABEL, J. C., Lancaster, Pa.: Stone implements from the banks of the Susquehanna River, near Turkey Hill, Pennsylvania (32510); hammer stones, pestles, grooved axes, arrow and spearheads found on the Conestoga Hills, near Lancaster (32545, 33082); hammer stones, rude notched implements, grooved ax, arrow and spearheads (33626).
- ABBOTT, Miss MOLLIE, Vineland, N. J.: Nine plants. 33729.
- ABBOTT, W. H., Washington, D. C.: Sword cane from New Orleans, two-barreled pistol, probably of German make, from Muskegon, Ill., and a baton. Loan. 33282.
- ABBOTT, Dr. WILLIAM L., Bombay, India: Five hundred and sixty-nine birds' skins, 61 birds' eggs, 13 birds' nests, reptiles, ethnological objects, insects, mammal skins, skulls, skeletons of mammals, reptiles, and birds, and worms from Trong, Lower Siam (32376); 78 mammal skins, 17 alcoholic mammals, 75 birds' skins, skeletons, insects, ethnological objects, and 8 lizards in alcohol from Ladak and Kashmir (33299).
- ADAMS, C. C., Urbana, Ill.: Eight specimens of *Brachyacmurus 4-punctatus* CURRIE (sp. nov.), from Phoenix, Ariz. 33494.
- ADAMS, Prof. F. D. (See under Interior Department, U. S. Geological Survey.)
- ADAMS, HERBERT, New York City: Plaster model of statue of the late Prof. Joseph Henry. 33682.
- ADLER, Dr. CYRUS, Smithsonian Institution: Pair of Syrian sandals. 32928.
- AGRICULTURE, DEPARTMENT OF, Hon. James Wilson, Secretary: Land shells collected in Mexico by E. W. Nelson (32677); three beetles and a grasshopper (32691); land shells collected by E. A. Nelson in Mexico, and fresh-water shells collected by Vernon Bailey in Washington (32752); crustaceans from Mexico collected by E. W. Nelson (32756); phyllopod crustaceans from California collected by Vernon Bailey (32821); crustaceans and leeches, fishes, shells, insects, reptiles, and batrachians collected by Professor Swingle and H. I. Webber in Florida (32829); pupa of *Dynastes tityus* (32899); guano of an insect-eating animal (32932); fresh-water shrimp from Mexico, and two crayfishes from Oregon and Virginia (33063); 944 specimens of Coccinellidæ collected by A. Koebele in Australia, China, Formosa, Japan, Hawaii, and Mexico (33079); small collection of fishes made by E. W. Nelson in Mexico in 1897 (33093); specimens of *Lironeca californica*, a fish parasite (33139); land and fresh-water shells from Mexico, and marine shells from Bermuda (33439); land and fresh-water shells from Mexico (33632).
- Material deposited in the National Herbarium:* Specimen of *Nandinia domestica* (32371); specimen of *Napolcoona imperialis* (32394); 47 western plants (32435); 1,800 plants collected by G. R. Vasey in Washington (32503); 63 plants collected by W. M. Canby and J. N. Rose in Virginia (32511); 59

AGRICULTURE, DEPARTMENT OF—Cont'd.

Material deposited in the National Herbarium—Continued.

plants from the Straits of Magellan (32562); 4 plants (32695); 600 plants (32738); specimen of *Euphorbia* (32810); 30 specimens of plants from New Mexico and Texas collected by J. K. Metcalfe (32827); 581 plants from Alaska collected in 1897 by W. H. Evans (32909); 28 specimens of Juncaceæ collected by Aven Nelson, Laramie, Wyo. (32944); specimen of *Isoetes* obtained by Prof. William Trelease at Como, Azores (32956); 7 plants collected by O. Metcalf in New Mexico (33000); 5 specimens of plants collected in Washington (33009); 55 specimens of dried plants (33012); plant collected by Prof. J. W. Toumey in Tucson, Ariz. (33013); 3 plants collected by C. V. Piper at Pullman, Wash. (33021); specimen of *Cinnamomum camphora* Nees and Eberm, collected by Dr. E. Teller at Nicholson, Miss. (33043); specimen of *Stapelia variegata* L., sent by N. Wolverton, Marshall, Tex. (33042); 9 plants collected by Dr. Peyton Turner, Navasota, Tex. (33066); 2 specimens of dried plants from Llano, Tex. (33067); 2 specimens of dried plants from Prof. H. Ness, of College Station, Tex. (33090); 2 specimens of Clematis, received from Dr. A. Gattinger, Nashville, Tenn. (33124); specimen of *Bumelia lanuginosa*, received from C. D. Beadle, Biltmore, N. C. (33128); 7 plants collected by F. F. Crevecoeur, Onaga, Kans. (33132); 638 plants collected by Robert M. Horner in south-east Washington (33199); 564 plants from Washington collected by E. P. Sheldon in 1897 (33200); plants collected by Walter H. Evans in Alaska (33232); 10 specimens of Juncaceæ and Cyperaceæ, collected in Washington by F. H. Lamb (33337); 183 plants collected in Mexico by Dr. E. Palmer (33434); 30 plants collected in Wyoming and South Dakota (33638); 11 specimens of dried plants collected in Nevada by Vernon Bailey (33712). (See under Mrs. R. M. Austin; C. D. Beadle; Berlin, Germany, Royal Botanical Museum; F. F. Crevecoeur;

AGRICULTURE, DEPARTMENT OF—Cont'd.

Material deposited in the National Herbarium—Continued.

Prof. W. G. Farlow; C. Forkert; Benjamin Heritage; James S. Hine; George B. King; J. H. Lovell; L. H. Pammel; R. H. Price; Dr. W. W. Rowlee; C. S. Sargent; R. S. Williams; J. Medley Wood; Rev. J. L. Zabriskie.)

- AIKEN, C. E., Colorado Springs, Colo.: Two type specimens of *Leucosticte atrata* and *Centronyx ochrocephalus*. Purchase. 33105.
- AINSWORTH, E. E. Seattle Fish Company. (See under J. O. Cates.)
- ALBANY MUSEUM. (See under Grahams-town, South Africa.)
- ALDRICH, Hon. T. H., Birmingham, Ala.: Unios from Alabama, representing 3 species. 32916.
- ALEXANDER, E. P., Greytown, Nicaragua. Snake from Nicaragua (32788); seeds supposed to be an antidote for snake bites, reptiles, and batrachians (33083); bat and 7 snakes (33344); plant (33606).
- ALGER, Gen. R. A. (See under War Department, U. S.)
- ALLEN, C. A., San Geronimo, Cal.: Seventy-one birds' skins from California. Purchase. 33054.
- ALLEN, CLARENCE GALE, Washington, D. C.: Framed portrait of Prof. Leonard D. Gale, associated with Prof. S. F. B. Morse in the University of the City of New York in connection with his work on telegraphy. 33541.
- ALLEN, DR. HARRISON (deceased): Skeleton of a young sperm whale. 33148.
- ALLEN, JAMES W., Ophir, Mont.: Fossil shell. 32518.
- AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, New York City, transmitted by R. W. Pope: Seeley dynamo; Davenport motor; an old-style and a new-style badge of the American Institute of Electrical Engineers. Deposit. 33438.
- AMERICAN MUSEUM OF NATURAL HISTORY, New York City: Five reptiles from Bisbee, Ariz., belonging to the Lumholtz collection. 33158.
- ANDREWS, Mrs. GEORGE, Knoxville, Tenn.: Living unios, representing 21

- ANDREWS, Mrs. GEORGE—Continued.
species (32639); living Unios, representing 12 species from the Holston River, Tennessee (32662); 2 living unios, from Knoxville (32718).
- ANDRUS, FRED., Elkton, Oreg.: Land shells, representing 2 species, from Elkton. 33259.
- ANTHONY, A. W., San Diego, Cal.: Larval eel (gift) (32546); 7 specimens of fishes, representing 2 species, shells, birds in alcohol (gift) (32682); reptiles, crustaceans (purchase) (32853); transmitted by F. M. Chapman: 2 petrels, including type specimen of a new species (deposit) (32905); transmitted by Dr. W. L. Ralph: 2 specimens of Shearwater in first plumage (gift) (32963); nest of *Troglodytes tanneri* from Clarion Island (gift) (32974); 17 birds' eggs from islands near Lower California (gift) (33056); 250 plants collected in Lower California (gift) (33219); 13 eggs of petrels from Lower California (gift) (33345).
- ARMINIUS CHEMICAL COMPANY, Mineral City, Va.: Iron and copper pyrites. 33329.
- ARMSTRONG, E. B., Waterloo, Va.: Loon (*Gavia imber*) in the flesh, from Virginia. 33566.
- ARNHEIM, J. S., San Francisco, Cal.: Land, fresh-water, and marine shells from the western coast of North America. 33227.
- ASHE, W. W., Raleigh, N. C.: Orchid, (gift) (32571); 321 plants (exchange) (33630).
- ASHMUN, Rev. E. H., Albuquerque, N. Mex.: Landshells from Colorado, New Mexico, and vicinity (32630); shells (32786); land and fresh-water shells, representing 17 species (33118); 5 specimens of pupas from Arizona and New Mexico (one new to the collection) (33595); land and fresh-water shells, representing 12 species, from New Mexico (33660).
- ASKEW, H. G., Austin, Tex.: Living unios from Texas (32538); 20 specimens of living unios, representing 5 species from the Sabine River (32518); unios from Texas (32838); living unios, from Texas, representing 5 species (32581); Unionidae, representing 2 species (33065); unios from Texas (33169).
- ATTWATER, H. P., San Antonio, Tex.: Fourteen birds' eggs and one nest from Texas (33156); nest and 3 spotted eggs of Black-throated sparrow, from Texas (33556).
- AUSTIN, Mrs. R. M., Quincy, Cal.: Five hundred plants (purchase) (32676); plant collected at Eureka Mills, Plumas County, Cal. (gift) (33327), (transmitted through Department of Agriculture); 1,037 specimens of plants collected in California (33713).
- BABCOCK, W. B., Washington, D. C.: Specimen of *Spharophthalma occidentalis* L.
- BADIE, MARTIN V. D., U. S. Army, transmitted by Charles Parker, hospital steward, Fort Robinson, Nebr.: Specimen of *Thalassa atrata* Fabr. 32520.
- BAER, Dr. H., Charleston, S. C.: Plant. 33140.
- BAILEY, VERNON. (See under Agriculture, Department of.)
- BAILEY, W. S., Waterville, Me.: Six specimens of aporhyolites from Vinal Haven, Me. 33535.
- BAIRD, Miss LUCY H. (See under Smithsonian Institution.)
- BAKER, Prof. CARL F., Alabama Polytechnic Institute, Auburn, Ala.: Diptera, representing 80 species (32685); 11 insects (33224); 237 specimens of *Jasidæ* (33245).
- BALIN, C. S., jr., Breaux Bridge, La.: Butterfly, fossil wood, and sample of clay. 33694.
- BANGS, OUTRAM, Boston, Mass.: One hundred and seventy birds' skins from Santa Marta Mountains, Colombia (33498); 2 birds from Santa Marta (33722).
- BARBER, A. W., General Land Office, Interior Department, Washington, D. C.: Sandstone concretion and fossil bones from North Dakota (33265); 4 specimens of *Helix* sp. from White River, Bad Lands (33281); skin of Badger (*Taxidea americana*) (33563); Long-billed Curlew, *Numenius longirostris*, from South Dakota (33572).
- BARLOW, C., Santa Clara, Cal.: Nine birds' skins. 32404.
- BARNES, HAMLIN, Wellsville, O.: Broken arrowheads and spearheads, illustrating the method of restoration. 32979.

- BARNUM, Lieut. M. H., U. S. Army, Fort Assiniboine, Mont.: Wood rat, *Neotoma cinerea*. 32816.
- BARRETT, O. W., Clarendon, Vt.: Diptera from Mexico (32993); 57 specimens of Mexican lepidoptera (33078); collection of insects from Mexico (33168); Mexican coleoptera (33224); 27 specimens of Mexican diptera (33310); small collection of Mexican diptera (33440).
- BARTSCH, PAUL, U. S. National Museum: Specimen of Brunnich's Murre, *Uria lomvia*, from the Potomac River, near Washington (32400); 28 shrikes and redpolls (exchange) (32580); 2 snakes from Virginia (32719); 3 salamanders from Virginia (32799); 15 podurids (33335); 2 frogs from Glen Sligo, Maryland (33624).
- BATES, GEORGE L., Benito, West Africa: Collection of mammal skins and skulls. Purchase. 33492.
- BATTER, JOHN D., London, England: Chromosylograph: "Eve" (Japanese). Presented to the Smithsonian Institution and deposited in the National Museum. 32331.
- BAXTER, R. T., Fishkill, N. Y.: Specimen of *Photuris pennsylvanica* De Geer. 32304.
- BEADLE, C. D., Biltmore, N. C., through Department of Agriculture. Plants (gift) (32372); plants (exchange) (33389); (exchange) (33570). (See under Agriculture, Department of.)
- BEADLE, H. M., Washington, D. C.: Copper ore from near Linden, Va. 32563.
- BEAN, Dr. TARLETON H., New York Aquarium, New York City: Threespecimens of Silversides, from Water Mill, Long Island (33187); specimens of *Elagatis bipinnulatus*; *Polydactylus octonemus*; *Scomber pneumatophorus*; hybrid trout, *S. fario* x *S. fontinalis*; crustaceans (33577); specimen of *Venus mercenaria* (33644).
- BECK, Dr. G. VON. (See under Vienna, Austria: K. K. Naturhistorisches Hofmuseum, Botanische Abtheilung.)
- BECK, R. H., Berryessa, Cal.: Five birds' skins from islands near California. 33603.
- BECKETT, W. H., Woodbury, N. J.: Rude leaf-shaped implements and arrowheads found in Gloucester County, N. J. 33391.
- BECKWITH, PAUL, U. S. National Museum: Badge of first lieutenant of the Union Veteran Corps (32939); pocket clock (33041); souvenir gilt medal struck by the Omaha Exposition Company (33727).
- BELL, ALEXANDER G., Washington, D. C.: Phonograph; 40 pieces of telegraphic apparatus; 19 pieces of induction balance apparatus; an audiometer; 20 pieces of photographic apparatus. 33721.
- BELL, Hon. JOHN C., House of Representatives: Ten photographs of rock inscriptions, from Colorado Valley. 33018.
- BENEDICT, A. L., Buffalo, N. Y.: Twenty archaeological objects, consisting of arrowheads, fragments of bone, and pottery from a kitchen-midden near Buffalo. 33610.
- BENEDICT, J. E., U. S. National Museum: Two salamanders from Nashville, Tenn. 32973.
- BENEDICT, J. E., jr., Woodside, Md.: Snakes and salamanders (33395, 33444).
- BENGUIAT, HADJI EPHRAIM, San Francisco, Cal.: Silver pointer for Pentateuch, seventeenth century, Morocco; manuscript of Book of Esther in a silver case, Fez, Morocco; washbowl and pitcher of Turkish gilt work used at the Passover; piece of tapestry "Golden Calf" sixteenth century, Spanish; "Judgment of Solomon," "French petit point" tapestry, seventeenth century. Deposit. 33164.
- BENJAMIN, Dr. MARCUS, U. S. National Museum: Badge of a Judge of Awards, Tennessee Centennial Exposition (33029); small glass lamp for burning whale oil, from Ware, Mass. (33086)
- BENJAMIN, Mrs. MARCUS, Washington, D. C.: Badge and button of the Union Veteran Union, and of the Sons of Veterans. 32833.
- BENTLEY, W. A., Nashville, Vt.: One hundred photographs of snow crystals. Purchase. 33452.
- BERLIN, GERMANY: KÖNIGLICHES BOTANISCHES MUSEUM, transmitted by Division of Botany, Department of Agriculture: Sixteen specimens of dried plants from various localities in the Old World. 33001.

- BERNADOU, Lient. J. B., U. S. Navy: Two-handed sword, ancient Chinese or Korean. Deposit. 32730.
- BETIS, R. L., Sebesta, Tex.: Specimen of *Balaninus obtusus* Blanchard. 32665.
- BEYER, Dr. GEORGE E., Tulane University, New Orleans, La.: Stone idol (Maya) from Costa Rica. 33681.
- BEYMER and HARTLEY, Rockyford, Colo.: Specimen of fossil rock (purchase) (33661); specimens of fossils (gift) (33683).
- BIBBINS, Prof. ARTHUR, Woman's College, Baltimore, Md., received through Interior Department, U. S. Geological Survey: Fossil plant from the Peach Bottom slates, Harford County, Md. 33611.
- BIEDERMAN, C. R., Goldhill, Oreg.: Specimens of serpentine from Roguo River Mountains, near Goldhill (32664); scorpion (*Scorpiops boreus* Girard) (32854); specimen of *Lepiscia clarkii* Boisduval (33533).
- BILTMORE HERBARIUM, Biltmore, N. C.: Three specimens of *Hicoria glabra villosa*. 32927.
- BISHOP, JAMES N., Plainville, Conn.: Two plants. 33250.
- BIXBY, M., Salt Lake City, Utah: Specimen of wood opal from Idaho. Purchase. "O" 33551.
- BLANKINSHIP, J. W., Cambridge, Mass.: Three hundred botanical specimens from Indian Territory and Oklahoma. Purchase. 32970.
- BLUNT, TAYLOR W., Alexandria, Va.: Specimen of "Tuckahoe"—Indian bread. 32440.
- BOGUE, E. E., Stillwater, Okla.: Acorns from *Quercus macrocarpa* (32900); specimens of *Canavalia* (33552).
- BOLTON, A. L., Palo Alto, Cal., transmitted through the Bureau of Ethnology: Two well preserved skeletons of "Digger" Indians. 33283.
- BOLTON, Dr. H. CARRINGTON, Washington, D. C.: Engraving of Joseph Priestley (gift) (33095); cane from Malacca, with black horn top, once the property of Joseph Priestley (deposit) (33141).
- BOND, L. W., Port Henry, N. Y.: Sixty-two slabs of Cambrian sandstone with tracks of *Climaticnites*. Purchase. 32903.
- BOURKE, Capt. J. G., U. S. Army (deceased), transmitted through Mrs. Mary T. Bourke, Omaha, Nebr.: Collection of ethnological objects. 33332.
- BOURKE, Mrs. MARY T. (See under Capt. J. G. Bourke.)
- BOWERS, STEPHEN, Los Angeles, Cal.: Insects from San Nicolas Island. 32598.
- BOYLE, P. C., Oil City, Pa.: Astral lamp from Quebec, Canada. 32652.
- BRADLEY, A. C., Newport, N. H.: Two specimens of *Homoglua carnosu*. 33366.
- BRAENDLE, FRED. J., Washington, D. C.: Specimens of *Mouarda fistulosa* (32322, 32358); 8 plants (32531); 14 plants (32553, 33671); land and fresh-water shells from Alabama (33734).
- BRANDEGEE, Mrs. KATHARINE, San Diego, Cal.: Three specimens of Cacti (gift) (33044); plant. (33521.) Exchange.
- BRANDEGEE, T. S., San Diego, Cal.: Plant. Exchange. 33433. (See under Interior Department, U. S. Geological Survey.)
- BRATLEY, J. H., Lower Cut Meat Creek Indian School, Rosebud, S. Dak., received through Bureau of Ethnology: Saddle made by Sioux Indians. 33315.
- BREBNER, CHARLES, Newberry, Mich.: Two photographs representing stone images and an inscribed table, the original of which was found near Newberry. 32978.
- BRENG, G. M., New Milford, Conn.: Rose quartz from Southford, Conn. 32982.
- BRETHERTON, B. J., Newport, Oreg.: Specimen of *Pachycheles rudis* Stimpson. 32861.
- BRETON, Miss ADELA, Bath, England: Thirty-eight small terra-cotta heads, statuettes, spindle-whorls, etc., from Metepec, near Toluca, Mexico. 33176.
- BRETTON, F. L., Oakland, Cal.: Land snails from California, representing two species, and a specimen of *Fusus* from Monterey. 32717.
- BRIDWELL, ARTHUR, Baldwin, Kans.: Specimen of *Nucula anadontoides* Meek; specimen of *Nuculana bellistriata* Stevens; specimen of *Edmoudia aspenvalensis* Meek; 3 specimens of *Bellerophon stercusanus* McChesny; specimen of *Meckella striatocostata* Cox; nodule with undetermined fossil, from the Upper Carboniferous of Douglas County, Kans. 32328.

- BRIGGS, Dr. A. A., East Andover, N. H.: Four plants. 33737.
- BRIMLEY, C. S., Raleigh, N. C.: Twelve moths (32472); larvæ of wingless female of *Phengodes laticollis* Leconte (32667);
- BRIMLEY, H. H. and C. S., Raleigh, N. C.: Skin and skull of Florida mole, *Scalops aquaticus australis* (gift) (32604); 4 skins and skulls of mammals (purchase) (33275); 4 snakes and 3 salamanders from Mississippi (purchase) (33127); reptiles (purchase, "O") (33405); catfish, *Schilbeoides furiosus*, from Crabtree Creek (gift) (32438); Musk Turtle, *Aromchelys odonata*, from Florida (gift) (33513); terrapins from North Carolina and Florida (gift) (33609); mink (purchase) (33571); skin and skull of a Florida Mole (*Scalops aquaticus australis*) (gift) (32711).
- BRITTS, Dr. J. M., Clinton, Mo.: Fresh-water shells from Clinton, representing 9 species (32904); land and fresh-water shells (33039).
- BRODNAX, Dr. B. H., Brodnax, La.: Medicinal plants (32480, 33569).
- BROOKDALE MUSEUM OF NATURAL HISTORY, received through Charles F. Newell, president, West Newbury, Mass.: Twenty-three birds' skins from Egypt. 33573.
- BROOKE, Mrs. H. C., Lexington, Va.: Land and fresh-water shells from Lexington, Va. 33393.
- BROOKE, Mrs. JOHN M., Lexington, Va.: Specimens of *Pemphigus uceriola* found on maple trees. 32726.
- BROOKER, CHARLES F. (See under Coe Brass Manufacturing Company.)
- BROOKS, ALFRED H. (See under Professor Alfred Lacroix.)
- BROWN, CHARLES F., Hot Springs, Ark.: Specimen of bauxite from Pulaski County, Ark., and specimen of quartz from Saline County, Ark. 33112.
- BROWN, EDWARD J., Lemon City, Fla.: Seven birds' skins. 32349.
- BROWN, H. E., Sisson, Cal.: Two specimens of Umbelliferae (gift) (32707); 227 plants (purchase) (32591); 239 plants from California (purchase) (33304).
- BROWN, Mrs. N. M., Ashtabula, Ohio: Nine hundred Mexican plants collected by E. W. Nelson (32380); 965 Mexican plants (32878). Purchase.
- BRUNER, Prof. L., Lincoln, Nebr.: Nine specimens of *Schistocerca paranense* Bruner, from Argentina, South America. 32918.
- BUCHANAN, CHARLES MILTON, Tulalip Indian Agency, Tulalip, Wash.: Edible bulb belonging to the genus *Sagittaria* (33374); 2 specimens of *Urtica* collected at the Tulalip Indian Agency (33656).
- BUCK, Dr. D. S., Lepanto, Ark.: Pottery vessel with two chambers connected by a Y-shaped neck, from a cemetery mound near Lepanto. Purchase. 33226.
- BULL, CHARLES P., jr., Ojus, Fla.: Snake. 33445.
- BURGESSER, C. C., York, Pa.: Elm-tree leaves affected with the elm-tree beetle. 32483.
- BURKHART, Rev. N., Baltimore, Md.: Fossil coral from Dorchester County, Md. 33268.
- BURNS, FRANK. (See under Interior Department, U. S. Geological Survey.)
- BUSH, B. F., Courtney, Mo.: One hundred and twenty-nine plants collected in southern swamps (33350); 337 plants (33402). Purchase.
- BUTLER, Mrs. MARY, Rockford, Wash.: Picture made by a Coeur d'Alene Indian. 33119.
- BUTLER, ROBERT, Forsyth, Mont.: Skull and fore feet of *Claosaurus*, from the Cretaceous near Forsyth. Purchase. 33376.
- BUTLER, WALTER, Chicago, Ill.: Larva of sawfly, *Cimbex americana*. 32516.
- BUTTON, FRED, Oakland, Cal.: Land and marine shells from California, representing 11 species. 33051.
- BUYSSON, M. le Marquis, HENRI DU, Bront-Vernet (Allier), France: One hundred and fifty-two examples of Scolybidæ, representing 27 species, and 3 parasites. 32494. Exchange.
- CAHN, LAZARD, New York City: Specimen of thanmasite from West Patterson, N. J., and a specimen of pollucite from Mount Mica, Paris, Me. (gift) (33316); 10 specimens of minerals (purchase) "O" (33336); minerals (purchase) "O" (33380).
- CALCUTTA, INDIA, Indian Museum, transmitted by Mr. Frank Finn: Specimens of birds in alcohol. Exchange. 32731.

- CALL, R. ELLSWORTH, Lawrenceburg, Ind.: Minerals, reptiles, insects, crustaceans, mollusks, specimens of blind fish, specimens of *Myotis lucifugus* from Mammoth Cave, Kentucky. 33228.
- CAMMANN, B. H., Empire City, Oreg.: Fossil porpoise skull. Purchase. 33386.
- CANBY, WILLIAM M., Wilmington, Del.: Plant from Vancouver Island, British Columbia (33137); 273 plants collected in the northwestern part of America (33284). Exchange. (See under Agriculture, Department of.)
- CANDLIN, H., Kerrville, Tex.: Turtle and two snakes from Texas. 33613.
- CANTWELL, GEORGE G., Howcan, Alaska: Twenty-two birds' skins from Alaska, bird's egg. 32414.
- CARINTHIA, AUSTRIA, Die Freie Vereinigung Tiroler Botaniker, Dellach Oberdraanthal (transmitted by Hans Simmer, secretary): One hundred and eighty-six plants collected in Austria and other localities. Exchange. 33174.
- CARNEGIE MUSEUM, Pittsburg, Pa. (transmitted by Herbert H. Smith, curator): Unionidæ from Pennsylvania, representing 28 species. 33062.
- CARNSE, S. P., Port Angeles, Wash.: Butterfly. 32396.
- CARPENDER, J. NEILSON, jr., New York City: One hundred and thirteen specimens, representing 51 species of Trenton formation fossils, from Baffin Land. 32959.
- CARPENTER, FRANK G., Washington, D. C.: Twelve prints illustrating the destruction of missionaries. 33251.
- CARRICO, E. T., Stithon, Ky.: Archaeological objects found in Salt River bottom, near Stithon (32776); rudely chipped flint implements and arrowheads from Hardin County, Ky. (33188).
- CARRIGER, HENRY W., Sonoma, Cal.: Specimen of *Parus rufescens* from California. 32596.
- CARUR, G. W., Tuskegee, Ala.: Medicinal plants. 33568.
- CATES, J. O., Port Townsend, Wash., received through Seattle Fish Company, E. E. Ainsworth: Specimen of *Aerotus willoughbyi*. Purchase. 33369.
- CATLEY, H., Syracuse, N. Y.: Lady-bird beetle, *Coccinella bipunctata* Linn. (33307); beetle (33733).
- CAWSTON AND COCKBURN, South Pasadena, Cal.: Skin of an ostrich. Purchase. 33293.
- CERAMIC ART COMPANY, Trenton, N. J.: Loving cup. Purchase. 32887.
- CHAMBERLAIN, DR. L. T., New York City: Living unios from Alabama (32773); living unios from Alabama, to be added to the "Lea Collection" (33123); Unionidæ (33183); living unios from Alabama (33240); unios from Alabama, representing 2 species (33252); 2 specimens of living Unionidæ from Japan (33527). Presented to the Smithsonian Institution and deposited in the National Museum.
- CHAPMAN, F. M. (See under A. W. Anthony.)
- CHAPMAN, GEORGE W., Cawker City, Kans.: Specimen of paint rock (gift) (33161); 2 septarian nodules from Kansas (exchange) (33547).
- CHINANFU, CHINA, Chinanfu Museum: Collection of Chinese medicines. Collected by Rev. V. F. Partch. Exchange. 32931.
- CHINANFU MUSEUM. (See under Chinanfu, China.)
- CHITTENDEN, F. H., Department of Agriculture: Pupa of *Dynastes tityus*. 32899.
- CHRISTIE, MILLER, Chelmsford, England: Photograph of a Hawaiian feather cloak. 32995.
- CHRISTMAS, J. M., Croome Station, Md.: Tooth of a fossil shark. 32814.
- CHURCHILL, WILLIAM: War club from Samoa. 33454.
- CLAPP, G. H., Pittsburg, Pa.: Land and fresh-water shells, and Unionidæ (32541, 32582, 32653, 33163).
- CLAPP, MAJ. WILLIAM H., Washington, D. C.: Tooth of a mastodon. 32801.
- CLARK, REV. AARON B., Rosebud, S. Dak.: Photograph of Sioux Indian women. 33311.
- CLARK, DR. C. K., Kingston, Ontario, received through William Palmer: Pair of shrikes from Ontario; (33585); prairie horned lark from Ontario. (33680.)
- CLARK, PRENTIS, Berea, Ohio, transmitted by G. H. Girty, U. S. Geological Survey: Seven specimens of Carboniferous invertebrates, and 8 specimens of Lower Carboniferous fossil plants from northern Ohio. 32823.

- CLARK, SANDA, Washington, D. C.: Two skins of *Fiber zibethicus*. Purchase. 33201.
- CLARK, DR. WILLIAM, Berea, Ohio, transmitted by George H. Girty, U. S. Geological Survey: Fish spine found in Berea shales, and a lamellibranch from Cleveland shale. 32770.
- CLEVELAND, D., San Diego, Cal.: Four specimens of *Frankenia palmeri*. 33561.
- CLEVELAND, DR. W. N., Toledo, Ohio: Type specimens of *Echinognathus clevelandi* Walcott, and Utica shale fossils from near Holland Patent, New York. 33447.
- COCKERELL, Prof. T. D. A. (See under New Mexico Agricultural Experiment Station.)
- COE BRASS MANUFACTURING COMPANY, Ansonia, Conn., transmitted by Charles F. Brooker, president: The Wallace collection of dynamos and electrical machinery. 32363.
- COHEN, Rev. HENRY, Galveston, Tex.: Copy of Jubilee Liturgy, in Hebrew, Marathi, and English, of the synagogue at Bombay. 32757.
- COIT, J. C., Denton, Tex.: Ammonite found in Denton County, Tex. 33472.
- COLE, Mrs., Washington, D. C.: Shuttle for weaving rag carpet. 33516.
- COLLAMARINI, Dr. G., Naples, Italy: Specimens of selenium. Purchase. 32921.
- COLLINS, F. S., Malden, Mass.: Fifty-two plants (33008); fascicle of plants (*Phycotheca Boreali-Americana* No. 8). (33008). Purchase.
- COLLINS, G. N.: Photograph of the Gohah tribes of Africa playing the game "Mancala." 33145. (See under New York Colonization Society.)
- COLONIZATION SOCIETY, Washington, D. C.: Five hats from Liberia, Africa, illustrating twined and coiled weaving. 33539.
- COLT, J. B., & Co., New York City: Six transparencies illustrating animal locomotion. Purchase. 33415.
- COMMONS, A., Wilmington, Del.: Five specimens of *Ophioglossum vulgatum* L. 32907.
- COMSTOCK, F. M., Cleveland, Ohio: Plants. Exchange. 33507.
- COOK, Mrs. ALICE, Washington, D. C.: One hundred plants from the Canary Islands. Purchase. 33460.
- COOK, H. L., Front Royal, Va.: Sphinx moth, *Protoparce rustica* Fabr. 32461.
- COOK, Prof. O. F., Washington, D. C.: Two lily bulbs from Africa (gift) (32635); 24 beetles from Pagna, Teneriffe (gift) (32884); 506 plants collected by F. C. Straub in Liberia (gift) (33110); more than 5,000 specimens of *Myxomycetes*, constituting Professor Cook's private collection (purchase) (33125); 23 vials containing African mollusks (gift) (33295); 3 bats and a specimen of *Crocidura* from Mount Coffee, Liberia, West Africa (gift) (33400); 156 plants (gift) (33432); specimen of *Cycloderma hubbardii* Cook (type) and a type and 5 cotypes of *Desmouss earlei* Cook (gift) (33496). (See also under New York Colonization Society.)
- COOKE, Dr. CLINTON T., Hutchinson, Minn.: Fourteen birds' eggs from Minnesota. 33096.
- COOKE, Miss J. M., San Diego, Cal.: Shells, representing 67 species, from Lower California and the Gulf of California (gift) (32775); specimens of west-coast shells (exchange) (33526).
- COOKE, M. P. B., Lockport, N. Y.: Nest of oriole. 32868.
- COOPER, W. B., U. S. National Museum: Silver watch with detached lever or anchor escapement. 33309.
- COOVER, A. B., Roxabell, Ohio: Photograph of a carved stone found at Baum Village, Ross County, Ohio. 33165.
- COQUILLET, D. W., Department of Agriculture: Seven hundred and eighty-two specimens of North American diptera and 28 specimens of European diptera, including several type specimens (32830); 487 specimens of diptera (32915); marmoset, *Hapale jacchus* (33253).
- CORDLEY, A. B., Corvallis, Oreg.: Thirty-seven specimens of diptera. 32841.
- CORNELL, Mrs. THOMAS L., Derby, Conn.: Twelve specimens of Etruscan pottery. Exchange. 33303.
- CORNING, Dr. G. A., Hampton, Iowa: Eight specimens of dried plants collected in Iowa and Wisconsin. 33351.

- COSBY, L. J., Cuckoo, Va.: Four hundred and forty-two archaeological objects from Louisa County, Va. 33514.
- COSTA RICA, INSTITUTO-FISICO-GEOGRAFICO DE COSTA RICA, San José, Costa Rica, transmitted by H. Pittier, director: Ten specimens (representing 3 species) of fresh-water crabs. 32399.
- COUBEAUX, EUGENE, St. Louis de Laurerzin, Saskatchewan, Canada, Northwest Territory: Two birds' skins (exchange) (32384); 16 birds' skins from northwestern Canada (exchange) (33081); 5 birds' skins (gift) 33697; 5 birds' eggs and a bird's nest (gift) (33679).
- COURTIS, W. M., Detroit, Mich., received through G. Heinemann: Fourteen fragments of pottery and 6 rude flint arrowheads found 12 feet below the surface near Yorkville, Ga. (32420); celestite from Put-in-Bay Island, Lake Erie, Ottawa County, Ohio (33555).
- COVILLE, F. V., Department of Agriculture: one thousand three hundred and sixty-nine herbarium specimens (32320); plant (32693); 31 specimens of *Hepatica* collected previous to and in 1890 (32948).
- COWLES, CALVIN J., Wilkesboro, N. C.: Specimen of flexible sandstone from "Bending Rock Mountain," North Carolina. 32777.
- COX, LISBON A., Keokuk, Iowa: Twelve fish spines, and 126 teeth of fishes from the Keokuk group near Keokuk, Iowa. One geode with millerite. Purchase. "O." 33429.
- COX, PHILIP, Chatham, New Brunswick, Canada: Two specimens of Killifish, *Fundulus diaphanus*. 32561.
- COX, W. V., U. S. National Museum: Engraved print of Don M. Dickinson. 33540. (See under Yan Foo Lee.)
- COXE, Hon. MACGRAUE, Southfields, N. Y.: Four plants. 32634.
- CRAIN, W. E., Tacoma, Wash.: Five photographs of whales. Purchase. 33360.
- CRAWFORD, Dr. J. D., Philadelphia, Pa.: Plants. 33637.
- CREVECŒUR, F. F., Auburn, Ala.: Ninety-two insects from Alabama, Colorado, Arizona, and Mexico (32410); 50 specimens of lepidoptera (32410); 185 insects (32491); 151 insects (32828);
- CREVECŒUR, F. F.—Continued.
transmitted through Department of Agriculture: 40 specimens of lepidoptera, 103 of hymenoptera, and 11 of coleoptera (32864); 230 specimens of hymenoptera, coleoptera, and diptera, etc. (33270); 14 specimens of hymenoptera and other insects (33361). (See under Agriculture, Department of.)
- CROCKETT, JAMES, Irish Lane, Pa., (received through Bureau of Ethnology): Spade-like natural formation (33510); stone pestle (33730).
- CROSBY, F. W., Naples, Italy: Geological material from Sweden (purchase) (32602); geological material from Norway and Sweden (purchase) (32760); basaltic columnus from Bennan, near Asbach, Rhenish Russia (gift) (33126).
- CROSS, Miss FLORA, Millport, N. Y.: Clear wing sphingid, *Hemaris diffinis* Boisd. 32517.
- CULIN, STEWART, University of Pennsylvania, Philadelphia, Pa.: Head of bone foreshaft and copper-barbed head of a sea-otter harpoon from Kadiak. (Returned.) 33034.
- CUMMINGS, Miss C. E., Wellesley, Mass.: Sixty-one lichens (32826); 44 lichens (33647). Exchange.
- CURRIE, ROLLA P., National Museum: Ethnological and natural-history specimens from Mount Coffee, Liberia. (Collected for the National Museum.) 32601.
- CURRIER, Rev. C. W. Necker, Md. Sixteen arrowheads and spearheads from Belmont County, Maryland. 32997.
- CURTISS, A. H., Jacksonville, Fla.: Six roots of *Tradescantia* (gift) (32615); 93 dried plants (purchase) (33210); 139 plants collected in Florida and 25 species of Algae (purchase) (33349).
- CUSICK, WILLIAM C., Union, Oreg.: Ten plants collected in Oregon (gift) (33115); 199 plants from Oregon (purchase) (33374).
- CUZNER, A. T., Gilmore, Fla.: Plant. 33372.
- DAGGETT, Governor JOHN, 32659, San Francisco, Cal.: Basket in process of being weaved (32659); 4 photographs of Klamath River Indians (32747); 16 photographs of Klamath, Trinity River, and Hoopa Indians (33160).
- DALE, T. NELSON. (See under W. N. Irwin.)

- DALL, W. H., U. S. Geological Survey: Marine shells from Coos Bay, Oregon, representing 10 species. 32895.
- DANIEL, Dr. Z. T., Browning, Mont.: Wood carving made by a Piegan Indian boy (32657); butterfly from the Rocky Mountains of Montana (32684); Indian food, obtained from a Blackfoot Indian of Montana (33458).
- DANIELS, L. E., Brookton, Ind.: Living Unionidæ (32431); living Unionidæ, representing 10 species, from the Wabash River (32498); living Unionidæ, representing 3 species (32874); living Unionidæ (32936); 5 nodules (10 specimens) of Mazou Creek animal remains (33354).
- DAUGHTERS OF THE AMERICAN REVOLUTION, transmitted by Mrs. Eleanor Holmes Lindsay, Washington, D. C.: Two-dollar bill, issue of 1776, Maryland, photograph of Nancy Cloes Ray, autograph letter of Sarah A. Exton. 32443.
- DAVIS, HOMER S., Rosa, Idaho: Bone from the gills of a large chub. 33701.
- DAVIS, M. C., Portland, Oreg.: Double-barreled rifle hidden in the lava beds by Captain Jack during the Modoc war. 32648.
- DAVIS, WILLIAM T., New Brighton, N. Y., received through C. L. Marlatt: Cynipid galls representing 3 species. 33538.
- DAY, A. E., Beirut, Syria: Sixty-seven specimens of lepidoptera. 32643.
- DELGADO, EULAGIO. (See under Lima, Peru, Sociedad Geografica.
- DETROIT MUSEUM OF ART, Detroit, Mich., transmitted by H. E. Sargent: Twenty-three species of shells, fresh-water and marine. 32466.
- DEYROLLE, EMILE, Paris, France. Models of plants. Purchase. 33394.
- DIAL, Mrs. M. B., San Luis Obispo, Cal.: Land and marine shells from California, representing 18 species. 33615.
- DICKHAUT, H. E., U. S. National Museum: Specimen of *Epeira trifolium* Hentz. 32729.
- DILL, HARRY P., Port Hope, Ontario, Canada: Unfinished Indian arrow-head. 32408.
- DILLER, J. S. (See under Interior Department, U. S. Geological Survey.
- DISSTON, HENRY & SONS, Philadelphia, Pa.: Seventeen saws manufactured by Messrs. Disston & Sons. "O." 33413.
- DODGE, BYRON E., Richfield, Mich.: Collection of archæological objects from Greene County, Mich., human skull from a mound in Lapeer County; and a polished hatchet from Germany. Deposit. 33493.
- DOGGETT, J. OTTO, Piedmont, S. C.: Hammer stones, polished hatchet, grooved ax, drilled ceremonial object, and arrow or spearheads from Greenville County, S. C. (33437), minerals (33476).
- DOLLFUS, ADRIEN, Charron, Paris, France: Five specimens of *Zenobia prismatica*. 32852.
- DOREMUS, C. A. (See under Henri Moissan.)
- DOUGLAS, J., New York City: Apache arrow. 33098.
- DRAKE, C. M., Tacoma, Wash.: Six starfishes representing 4 species, from Puget Sound, Washington (exchange) (32302); shell of *Physa* from California (gift) (32701); specimens of Miocene fossils from Eel River, California (gift) (33162); specimens of *Asterias brevispina* Stimpson and *Asterias ochracea* Brandt (gift) (33503); starfish, sea-urchin, and 2 snails (33715).
- DRAKE, Mrs. C. M., Tacoma, Wash.: Land, fresh-water, and marine shells. 32312.
- DRAKE, N. F., Nampa, Idaho, transmitted by W. Lindgren: Stone pestle from near Snake River. 32972.
- DRAPER COMPANY, Hopedale, Mass.: Four spindles, 4 shuttles, and 2 photographs of looms. 33404.
- DREW, Prof. GILMAN, Johns Hopkins University, Baltimore, Md.: Marine mollusks, representing 3 species. 33515.
- DUBLE, J. C., Williamsport, Pa.: Specimen of *Thomisus aleatorius*. 32512.
- DU BOIS, RHESA GRIFFIN, Washington, D. C.: Basket and photograph, to be exhibited with the Horton basket machine. 33049.
- DUBOIS, Dr. EUGENE, The Hague, Holland: Plaster cast of the skull of a specimen of *Pithecanthropus erectus*. 32865.
- DUCKWORTH, A. S., Poplar Bluff, Mo.: Specimen of *Habenaria paramana*. 32572.

- DUGÈS, Dr. A., Guanajuato, Mexico: Cincture made from the inner bark of a tree (gift) (32656); 4 plants (gift) (32806); specimen of *Crotulus poly-stictus* (exchange) (32988); 3 birds' skins (gift) (33028); 12 plants (gift) (33136).
- DUNN, M., Burlington, Iowa: Sixty-two specimens of Burlington group fossils. Purchase. "O." 33353.
- DUNTON, J. J. (See under Treasury Department, U. S. Life-Saving Station.)
- DURGUS, G. B., Nasbie, Va.: Geological specimens. 33716.
- DURY, CHARLES, Cincinnati Society of Natural History, Cincinnati, Ohio: Specimen of *Endesma undulata* Welsh, new to the Museum collection; three specimens of aculeate hymenoptera. 32722.
- DUVAL, G. S. and F. F., Conaways, Md.: Chipped and partly polished hatchet and 64 arrowheads from Anne Arundel County. 33714.
- DUVAL, H. C., Washington, D. C.: Paint stone, found in a quarry workshop, in Pulaski County, Ill. 32429.
- DYER, E. G., Warren, Ohio, transmitted by David White, U. S. Geological Survey: Three specimens of *Arthararia barbata* and one specimen containing trails, from Squaw Creek, near Girard, Ohio (32851); 153 specimens of hymenoptera (32728); 150 specimens of diptera (32749); 150 of lepidoptera, principally new to the collection (32881).
- EAKLE, A. S., Washington, D. C.: Geological material from Tyrol. Exchange. 32557.
- EARLE, Mrs. ALICE MORSE, Brooklyn, N. Y.: Four photographs of tape-looms. Exchange. 33649.
- EARNST, JOHN PAUL, Washington, D. C.: Brick supposed to have been taken from the foundation of the house where George Washington was born. 33247.
- EATON, B., Department of Agriculture: Four plants. 33373.
- ECKELS, Rev. C. E., Petchaburee, Siam: Two Siamese tracts written by a native (33277); 106 ethnological objects from Siam (33477).
- ECKSTEIN, W. C., Washington, D. C.: Specimen of *Cucullia gigantea* Conrad, from the Eocene formation at Fort Washington, Md. 32393.
- EDMAN, J. A., transmitted by H. W. Turner: Specimen of *Loftusia columbiana* Dawson. 33190.
- EDWARDS, H. S., Sparta, Ga.: Specimen of *Chauliodes pectinicornis*. 33719.
- EDWARDS, S. M., Argusville, N. Dak.: Thirteen specimens of unios, representing 7 species, from Argusville. 32479.
- EGGLESTON, W. W., Rutland, Vt., received through F. H. Knowlton: Thirty-three plants. 33580.
- EIGENMANN, Dr. C. H., Bloomington, Ind.: Three specimens of *Amblyopsis spelæus*. 33243.
- ELERICK, W. L., Cannonsburg, Mich.: Larva of *Eristalis tenax* Linn. 32611.
- ELY, T. N. (See under Pennsylvania Railroad Company.)
- ENGLISH, GEORGE L., & Co., New York City: Minerals. "O." (33341); ores and minerals. "O." (33398). Purchase.
- ENOS, Mrs. ANNA F., Saratoga, N. Y.: Specimens of Maple-tree Pemphigid, *Pemphigus acericola* Riley. 32336.
- EVANS, W. H. (See under Agriculture, Department of.)
- EVERETT, JAMES J., National Military Home, Kans.: Spore-cases of one of the lower cryptogams, *Marsilia* sp. 32723.
- EYRE, M. K. (See under General Electric Company.)
- FAIRCHILD, D. G., Department of Agriculture: Collection of Javanese insects. 33677.
- FALL, Prof. H. C., Pasadena, Cal.: Six specimens of *Pheidole hyatti* Emery; new to the collection. 33481.
- FARLOW, Dr. W. G., Cambridge, Mass., transmitted through the Department of Agriculture: Eleven specimens of fungi. 33151.
- FAXON, Dr. WALTER. (See under Museum of Comparative Zoology, Cambridge, Mass.)
- FAY, J. A., & Co., Cincinnati, Ohio: Five cuts of planing machines. "O." 33525.
- FEATHERSTONAUGH, Dr. THOMAS, Washington, D. C.: Human skull from New Mexico. 33617.
- FEILDEN, Colonel, Wells, Norfolk, England: Six plants representing the flora of Nova Zembla. 32795.
- FERNALD, Prof. H. T., State College, Pa. Parasites. 32342.

- FERNALD, M. L., Gray Herbarium, Botanic Garden, Cambridge, Mass.: Fifteen specimens of *Antennaria*. 33628.
- FERRISS, J. H., Joliet, Ill.: Living Unionidae, representing 2 species (gift) (32627); living specimens of *Margaritanas* from the Kankakee River, Illinois (gift) (32742); land shells from Tennessee (exchange) (32792); fresh-water shells, representing 25 species, from the eastern United States (gift) (32837); land shells, representing 2 species, from Illinois (gift) (33614).
- FEWKES, Dr. J. WALTER, Washington, D. C.: Twenty-five doills illustrating the symbolism of Zuni gods (33194); 13 "breath feathers," naqua kwoci of the Soyaluna Ceremony; 4 Soyaluna pabos, obtained from the Mokis, Walpi, Arizona (33689). (See also under A. F. Potter.)
- FIGE, WILFRED A., Dragoon, Ariz.: Blood-sucking Cone-nose, *Conorhinus sanquisuga* Leconte. 32889.
- FIELD COLUMBIAN MUSEUM, transmitted by W. H. Holmes, Chicago, Ill.: Ethnological objects and a miscellaneous collection of archaeological objects from Mexico and South America. Pottery and bronze objects from an Etruscan tomb (32689); 811 specimens of plants from Yucatan, collected by C. F. Millspaugh. (32737.) Exchange.
- FIGGINS, J. D., Kensington, Md.: Turtle (gift) (32309); 85 birds' skins from Greenland (purchase) (32708); skins and skull of a Greenland hare, *Lepus granlandica* (purchase) (33592).
- FINN, FRANK. (See under Calcutta, India: Indian Museum.)
- FISH COMMISSION, U. S., Hon. J. J. Brice, Commissioner: Marine invertebrates, fishes, mollusks, insects (32348); marine shells and mollusks representing 4 species (32607); crabs (*Portunus sayi* and *Planes minutus*) from Vineyard Sound (32672); types and cotypes of fishes collected in the North Pacific Ocean, Bering Sea, Oregon, Florida, and New York (32960); fishes from Florida, Virginia, and Louisiana, (32992); type specimens of four new species of fishes collected by the steamer *Albatross* in 1896 and 1897 (33011); Stilt, *Himantopus mexicanus*, from Texas (33428); transmitted by the Leland
- FISH COMMISSION, U. S.—Continued.
Stanford Junior University, Stanford University, California: type specimen of *Oligoplites mundus* from San Juan Lagoon, Mexico, collected by steamer *Albatross* (33459); specimen of *Caulolepis longidens* from the Pacific Ocean, collected by the steamer *Albatross* (33490); type specimens of *Arerruncus sterletus* and *Radulinus boleoides* collected in the North Pacific Ocean by the U. S. Fish Commission steamer *Albatross* (33502); fresh-water shells collected by Dr. C. H. Gilbert while in the service of the Fish Commission in Oregon and California (33534); type specimens of *Notropis chamberlaini* and *Notropis louisiana*; four cotypes of *Notropis chamberlaini* (33658).
- FISHER, H. L., Stockton, N. J.: Specimens of *Psocus venosus* (32427); larvæ and imago of *Epilachna borealis* Fabr. (32482.)
- FISHER, WILLIAM H., Baltimore, Md.: Photograph of double nest of a Chipping Sparrow from Talbot County, Md. 32794.
- FITCH, Mrs. CLARA, Sault Ste. Marie, Mich.: Photograph of a stone object found near Sault Ste. Marie. 32468.
- FLEMING, J. H., Toronto, Ontario, Canada: Eleven birds' skins from Canada. 32418.
- FLINT, Dr. JAMES M., U. S. Navy: Leather pocket-book, the property of the grandfather of Dr. Flint (Daniel Flint of Hillsboro, N. H.), containing 47 coins. 32406.
- FLORIDA TIMES-UNION AND CITIZEN, received through G. W. Wilson, Jacksonville, Fla.: Spotted Snake Eel, *Ophichthys guttifer*, from Nassau Sound. 33463.
- FLOYD, FRENCH, Washington, D. C. Specimen of Horned Grebe, *Colymbus auritus*. 33167.
- FLYNT, FRANK, General Land Office, Washington, D. C.: Pottery head found about one-half mile from the McIntosh trail from Indian Springs to Alabama, 6 miles northwest from Griffin, Ga. 33408.
- FOOTE, Dr. A. E., Philadelphia, Pa.: Specimen of roebingite, from Franklin, N. J. (33607); specimen of mineral (33731). Purchase.

- FOOTE, WARREN M., Philadelphia, Pa.: Minerals. Purchase. "O." 33368.
- FORD, JOHN, Philadelphia, Pa.: Land shells from the Bahama Islands, representing 2 species. 33292.
- FORESTIER, J., keeper of Saluria lighthouse, Matagorda Island, Tex., received through Hon. J. D. Mitchell: Deformed claw of a specimen of *Callinectes sapidus* from Espiritu Sancto Bay, Texas. 33653.
- FORKERT, C., transmitted by Department of Agriculture: Seven specimens of plants from Mississippi. 33711.
- FOWKE, GERARD. (See under Smithsonian Institution, Bureau of Ethnology.)
- FRANKLIN INSTITUTE, Philadelphia, Pa., transmitted by H. Heyl, actuary: Two bronze medals of the institute. 32919.
- FREDHOLM, A., Baltimore, Md.: Three hundred and twenty-nine plants collected in Jamaica in 1897. 33171.
- Freie Vereinigung Tiroler Botaniker [Die]. (See under Carinthia, Austria.)
- FRIC, V., Prague, Bohemia: Specimen of hessite on quartz. Purchase. "O." 33443.
- FRIEL, F. W., Victoria, Tex.: Seven arrowheads. 33430.
- FRIERSON, L. S., Frierson's Mill, La.: Three specimens of unios (gift) (32540); unios, representing 2 species, from Logansport, La. (gift) (32843); unios from the Sabine River (gift) (32767); 2 specimens of unios (gift) (33061); 6 specimens of Tertiary fossils (exchange) (33267).
- FRIESS, Dr. H., Innsbruck, Austria: Nine hundred and seventy-four specimens of bees. Exchange. 32869.
- FROBENIUS, Dr. L., Swiss Museum of Ethnology and Archaeology, Basel, Switzerland: Archaeological objects from Swiss lake dwellings. Exchange. 32763.
- FUCHS, Dr. Theo. (See under Vienna, Austria: K. K. Naturhistorisches Hofmuseum, Botanische Abtheilung.)
- FULTZ, Prof. F. M., Washington, Iowa: Four hundred and fifty specimens of Burlington crinoids. Purchase. "O." 33465.
- FURLONG, E. B., Livingston, Ariz.: Modern Turkish "spiel-pfennig," found in ruins in the Sierra Ancha Mountains, Arizona. 32493.
- FURNESS, Dr. W. H., Philadelphia, Pa.: Thirty birds' skins; turtle skeleton; mammal skins from Borneo. 32415.
- FUR SEAL COMMISSION, U. S.: Fur seal (32745); transmitted by Leland Stanford Junior University: bones of mammoth and bear (33382).
- GAILLARD, Mons. FELIX., Morbihan, France: Fac simile of a sculptured sign on a dolmen near Carnac, France. 32445.
- GANE, HENRY S., Chicago, Ill., received through Bureau of Ethnology: Stone hatchet and a sock made of turkey feathers. Purchase. "O." 33483.
- GARNER, EDWARD, Quincy, Cal.: Eleven butterflies (gift) (32457); skin and skull of chipmunk, *Tamias quadrimaculatus* Gray (exchange) (32678); 20 birds' skins from California (exchange) (32803); 5 birds' skins from California, and 3 mammal skins from California (gift) (32961).
- GATLING GUN COMPANY, Hartford, Conn.: Photograph of a Gatling gun; also photographs of a Gatling gun mounted on a tripod. 33518.
- GATTINGER, Dr. A. (See under Agriculture, Department of.)
- GEDDIS, THOMAS R. T., Bassett, Nebr.: Specimen of *Monohammus confusor* Kirby, and Crab-spider, *Xysticus limbatulus* Keyserling. 32732.
- GEIGER, Dr. G. B., Manning, S. C.: Specimen of *Sus scrofa domesticus*. 32527.
- GENERAL ELECTRIC COMPANY, Schenectady, New York: Nineteen specimens of porcelain, and 15 pieces of insulated wires (gift) (33184); 18 pieces of electrical apparatus (deposit) (33185). Transmitted through M. K. Eyre, manager, lamp works, Harrison, New Jersey: Twenty-seven incandescent lamps (gift) (33407). Transmitted through S. D. Greene: Edison bi-polar dynamo, originally used in the steamer *Columbia*, 1878 (gift) (33703).
- GENOA, ITALY: Museo Civico di Storia Naturale, Genoa, Italy, transmitted by Dr. R. Gestro: Alcoholic specimen of *Heterocephalus glaber*, from Somaliland, Africa. Exchange. 32890.
- GEOLOGISCH-PALAEONTOLOGISCHES INSTITUT. (See under Munich, Germany.)

- GEOLOGICAL SOCIETY OF LONDON. (See under London, England.)
- GESTRO, DR. R. (See under Genoa, Italy, Museo Civico di Storia Naturale.)
- GETMAN, DR. A. A., Chaumont, N. Y.: Specimen of *Lituites undatus* Conrad (33291); trilobite, *Illænus crassicaudus americanus* Billings, from the Trenton formation (33387); 3 specimens of Trenton cryolites (33593); 3 trilobites from the Trenton formation (33697).
- GILBERT, MRS. A., Plainfield, N. J.: Larvæ of the Hickory Saw-fly, *Selandria caryæ* Norton. 32316.
- GILBERT, B. D., Clayville, N. Y.: Ferns from Bermuda. 33554.
- GILBERT, DR. C. H. (See under U. S. Fish Commission; Leland Stanford Junior University.)
- GILBERT, PROF. G. K., U. S. Geological Survey: Unionidæ from Erie Canal, New York. 33699. (See also under Interior Department, U. S. Geological Survey.)
- GILMORE, R., Creston, Iowa: Sphinx-moth. 32499.
- GIRTY, G. H. (See under Prentis Clark; Dr. William Clark; Thomas Piwonka.)
- GLATFELTER, N. M., St. Louis, Mo.: Ten specimens of willows (gift) (32783); 26 plants (exchange) (33047).
- GODING, DR. F. W., Rutland, Ill.: Specimens of *Telamona*, representing 4 species, new to the collection (32389); type specimen of *Stetheophyma doranii* Goding (33221).
- GOLDMAN, E. A., Tampico, Mexico: Twenty-five plants collected in Mexico (33091); 140 plants from Mexico (33583); received through Department of Agriculture: 13 plants collected in Mexico (33655). (See under Agriculture, Department of.)
- GOLL, REV. G. P. (See under New York Colonization Society.)
- GOODFELLOW, EDWARD, U. S. National Museum: Atlantic cable signal-key used in telegraphic longitude determinations between Europe and America in 1869-1872. Purchase. 32985.
- GOODRIDGE, F. G., New York City: Trilobite, *Illænus americanus*, from Silliman's Fossil Mount, Baffin Land. 32882.
- GOODYEAR RUBBER COMPANY, Washington, D. C.; Velocipede made about 1870. Purchase. 32807.
- GORDON, R. H., Cumberland, Md.: Six specimens, representing 2 species, of Clinton group brachiopoda, and 18 specimens, representing 2 species, of Niagara group brachiopoda. 32855.
- GORMAN, M. W. (See under Interior Department, U. S. Geological Survey.)
- GOULD, C. N., Winfield, Kans.: Thirty-seven flaked flints, from quarries at Maple City, Kans. 33640.
- GRAHAMSTOWN, SOUTH AFRICA: ALBANY MUSEUM, transmitted by Dr. S. Schönland: Skeleton of an African elephant. Exchange, 33147.
- GRANT, COL. CHARLES COOTE, Hamilton, Ontario, Canada: Box containing 53 specimens of Niagara graptolites and other fossils. 33672.
- GRAVES, C. B., Groton, Conn.: Plants from Connecticut. 32908.
- GRAVES, JAMES A., Susquehanna, Pa.: Specimen of *Hieracium pilosella*. 32458.
- GRAY HERBARIUM, Cambridge, Mass.: Fifty-eight specimens of Mexican plants, and 12 specimens of Mexican Umbelliferae. Exchange. 33506.
- GREATA, LOUIS A., Los Angeles, Cal.: Specimens of *Baria tenella*. 33453.
- GREEN, LYDIA OLIVE, Chicago, Ill.: Two pieces of music written in commemoration of the union of the Blue and the Gray at the unveiling of the Logan monument in Chicago, July 22, 1897. 32369.
- GREENE, PROF. E. L., Catholic University, Washington, D. C.: Specimen of *Viola atlantica* collected in Anne Arundel County, Md. 33605.
- GREENE, S. D. (See under General Electric Company.)
- GREGER, D. K., Fulton, Mo.: Land shells, representing 2 species (32486); 42 specimens of brachiopods, representing 6 species from the St. Louis formation of Missouri (32644); 35 specimens, representing 19 species of Carboniferous fossils, and 2 specimens of calciferous fossils (32858); 4 specimens of *Seminula* from the Kaskaskia formation (33033).
- GRINDELL, DR. C. S., Baltimore, Md.: Trumpeter pigeon, in the flesh. 33007.
- GRINNELL, JOSEPH, Pasadena, Cal.: Six specimens of *Agelaius* (32315); 3 goldfinches, including a specimen of *Spinus tristis salicamans* (32506); type specimen of kinglet, representing a new

GRINNELL, JOSEPH—Continued.

subspecies (32507); 6 birds' skins (32524); specimen of Vigor's Wren *Thryothorus b. spilurus* from California (33157); 7 birds' skins from California, including type of a new subspecies of rock wren (33181); 6 birds' skins, including a type of *Harpochynchus redivivus pasadenensis* from California (33450).

GROSS, H. L. W., Alexandria, Tenn.: Specimen of *Spharophthalma occidentalis* L. 32533.

GROSSE, HERRMAN, Paraguay, Republic of Paraguay: Thirteen beetles. 32628.

DE GROSSOUVRE, M. A., Bourges (Cher), France: Cast of type specimen of *Schlüteria larteti*. Exchange. 33276.

GUMP, H. D., Johnson City, Tenn.: Indian hatchet from Johnson County, Tenn. Purchase. 33543.

HABIGHURST, C. B., Las Cruces, N. Mex.: Specimen of gypsum from near Tularosa. 33378.

HACKNEY, W. H., Glenns Ferry, Idaho: Two teeth of a fossil bison. 33120.

HAGGARD, Dr. J. B., Parsons, Tenn.: Specimen of *Caryocerinus ornatus*. 33529.

HALL, B. H., Washington, D. C.: Kearney cross. 32849.

HALL, Mrs. CHARLES CUTIBERT, Westport Point, Mass.: Abnormal specimen of *Botrychium ternatum*. 32489.

HALL, H. M., Riverside, Cal.: One hundred and sixty-five plants obtained principally from San Jacinto Mountains, California. Purchase. 32875.

HAMBURG, DAVID T., London, England: Collection of photographs taken in Central Asia. 32640.

HAMILTON, JAMES M., received through Dr. R. W. Shufeldt, of Takoma Park, D. C.: Eight specimens representing new species of *Holospira* from Rio

HAMILTON, JAMES M.—Continued.

Grande Mountains, Brewster County, Tex. (32393); 9 fossils from the Comanche series of Texas, and a chipped flint knife (32741); specimen of *Eucide bartonioides* (33068); transmitted by T. W. Stanton; flint spearhead of Apache origin, found at Semiside Spring, Chisos Mountains, Foley County, Tex. (33203).

HANCOCK, G. R., cadet, U. S. Military Academy, West Point, N. Y.: Collection of personal relics of the late Gen. Winfield S. Hancock, U. S. Army. Deposit. 32876.

HANHAM, A. W., Winnipeg, Manitoba, Canada; Fifty-two specimens of microlepidoptera, mostly new to the Museum collection (33077); collection of microlepidoptera (33257).

HANSEN, GEORGE, Berkeley, Cal.: Sixteen specimens of *Junci*. 32957.

HARDING, JOHN H., Washington, D. C.: Snake. 33545.

HARLAN, H. H. (See under Harris, I. H., estate of.)

HARPER, THOMAS. (See under Western Pennsylvania Historical Society.)

HARRIES, GEORGE, Hankow, China, received through Miss E. R. Scidmore: Two bricks of tea made for the Tibetan trade. 33455.

HARRINGTON, RAYMOND, Mount Vernon, N. Y.: Arrowheads, scrapers, etc., of quartz and quartzite, found in the District of Columbia. 32333.

HARRIS, ISAAC, Georgetown, D. C.: Harmoni flute. Purchase. 33286.

HARRIS, ISRAEL H., estate of, transmitted by the administrators, H. H. Harlan and R. F. Mosher, Waynesville, Ohio: Seventy-five boxes containing the "I. H. Harris Collection" of fossils and archaeological objects, consisting of about 20,000 specimens.¹ 33149.

¹Mr. Charles Schuchert, of the National Museum, was detailed to make an examination of the collection before its transfer to Washington. Upon the completion of his work he addressed the following letter to the administrators:

Messrs. R. F. MOSHER and H. H. HARLAN,

Administrators of the I. H. Harris Estate.

GENTLEMEN: In making a survey of the natural-history specimens belonging to the late Mr. I. H. Harris, of Waynesville, Ohio, consisting of fossils, archaeological specimens, shells, and minerals, about 15,546 specimens were found, as per appended list. The number of specimens here given is not exact, but it appears safe to state that there will be more than that number present when the collection is completely brought together. The total includes the duplicate specimens which Mr. Harris agreed should be exchanged by the U. S. National Museum whenever favorable opportunity offers.

WAYNESVILLE, OHIO, December 29, 1897.

- HARRISON, Miss CARRIE, U. S. National Museum: Three plants. 32573.
- HARRISON, S. R., Clarksburg, W. Va.: Specimen of *Corydalis cornutus*. 32312.
- HART, GEORGE B., Baltimore, Md.: Living pigeon imported from England. 33604.
- HART, W. W. & Co., New York City: Kadiak bear skull. Purchase. 32351.
- HARVARD HERBARIUM, Cambridge, Mass.: Specimen of *Stylosanthes elatior* from Tennessee, and specimen of *Stylosanthes procumbens* from Florida. 32977.
- HASBROUCK, Dr. E. M., Washington, D. C.: Two hundred and eighteen birds' skins from North America (32403); 585 birds' skins from North America (33014). Purchase.
- HASSALL, Dr. ALBERT, Department of Agriculture: Parasites. Deposit. 32341.
- HASSETT, BURDETT, Reliance, Va.: Oven-bird, *Seiurus aurocapillus*, in the flesh. 32549.
- HATCHER, J. B. (See under Smithsonian Institution, Bureau of Ethnology.)
- HAWKINS, ARMAND, New Orleans, La.: Print from a copperplate by Diego de Villegas. 33032.
- HAWKS, A. McL., Tacoma, Wash.: Photograph of specimens of *Glycimeris generosa* Gld. 32496.
- HAY, Prof. O. P., U. S. National Museum: Eggs of *Amphiuma means* from Arkansas. 33058.
- HAY, Prof. W. P., Washington, D. C.: Specimen of *Necturus* from Cayuga Lake, Ithaca, New York. 33468.
- HEIDEMANN, O., Petworth, D. C.: Six specimens of *Neuroctenus simplex* Uhler. 32637.
- HEINEMANN, G. (See under William M. Courtis.)
- HEINRICH, W. F., Indianapolis, Ind.: Mole cricket, *Gryllotalpa columbie* Scudder. 32528.
- HELLER, A. A., Minneapolis, Minn.: Three plants (exchange) (32705); 345 plants from New Mexico (purchase) (32796). (See under Minnesota, University of.)
- HENDERSON, JOHN B., jr., Washington, D. C.: Two valves of *Unio duclirei* from Siam, and two unios in alcohol from

The specimens thus obtained in exchange are to be added to the permanent portion of the "I. H. Harris Collection." The number of duplicate specimens, however, can not be given until the entire collection has been studied in Washington.

The following is a list of the specimens in the collection:

	Number of specimens.
Crinoids from the Cincinnati group.....	1, 018
Crinoids from Crawfordsville, Ind	860
Crinoids from Burlington, Iowa.....	131
Crinoids from various other localities.....	109
Crinoid slabs from the Cincinnati group.....	50
Agelacrinus and related forms.....	117
Total crinoids.....	2, 285
Palaester in bank office.....	1
Starfishes in Washington, D. C.....	40
Total starfishes.....	41
Calymena senaria (a trilobite)	888
Other Cincinnati group trilobites	294
Trilobites from other geological horizons.....	84
Total trilobites.....	1, 266
Brachiopoda from the Cincinnati group.....	1, 200
Brachiopoda from all other geological horizons	169
Gastropoda from the Cincinnati group.....	170
Gastropoda from all other geological horizons	35
Lamellibranchiata from the Cincinnati group	601
Cephalopoda from the Cincinnati group.....	38
Total mollusca.....	2, 213
Miscellaneous fossils from the Cincinnati group.....	751
Paleozoic fossils from all horizons other than the Cincinnati group.....	1, 416
Secondary and tertiary fossils	254
Total fossils	8, 226

- HENDERSON, JOHN B., jr.—Continued.
Europe (32432); specimen of *Fissurella* from Acapulco, Mexico (32834); musical instruments from Peking, China (33113).
- HENDERSON, L. F., University of Idaho, Moscow, Idaho: Three specimens of a new Aster. 33220.
- HENSHAW, H. W., Hilo, Hawaii: Skin of *Acridothores tristis* from Hilo, Hawaii (32624); 2 skins of Flycatchers (33621).
- HERITAGE, BENJAMIN, received through Department of Agriculture: Four plants. 32411.
- HERRICK, C. L., Albuquerque, N. Mex.: Plants collected on the Tres Maria Islands and western coast of Mexico. 33305.
- HEYL, Mrs. EMMA L., Washington, D. C.: Dance shirt (ghost dance) and a hoop ("signal"), obtained from the Sioux Indians, South Dakota. 33383.
- HEYL, H. L. (See under Franklin Institute.)
- HEYWARD, W. N., Hardeeville, S. C.: Specimen of *Actias luna* Liñ. 32529.
- HIBBARD, D. R., Sturgis, Mich.: Marine shells from New Smyrna, Fla. 33651.
- HICKS, G. H., Department of Agriculture: Specimen of *Polygonum tenue* (32510); 4 plants from the greenhouse of the Department of Agriculture (32568).
- HILDBURGH, L. W., New York City: Seven unmounted prints of objects, consisting of Indian implements, ornaments, etc. 33646.
- HILDEBRAND, A. M., College Station, Tex.: Specimen of *Gutierrezia berlandieri*. 32570.
- HILLS, R. C., U. S. Geological Survey: Four specimens of crustacean trails from the Cretaceous Apishapa formation of southern Colorado. 32364.

Archaeological specimens:

Pottery	86
Axes, pestles, and other stone implements	1,147
Spear and arrow points and other flint implements	4,508
Copper pieces	10
Stone pipes	12
Stone mask found at Fort Wayne, Ind.	1
Bone implements from Madisonville, Ohio	100
Total archaeological specimens	5,864
Minerals	306
Land and fresh-water shells	650
Marine shells	500
Total shells	1,150

SUMMARY.

Fossils	8,226
Archaeological specimens	5,864
Minerals	306
Recent shells	1,150
Total specimens in the "I. H. Harris collection"	15,546

In bequeathing this collection to the U. S. National Museum, Mr. Harris also provided that "my beloved wife, Edith, and my daughters Laura H. Mosher and Minnie Mildred Harris shall have the privilege of selecting from any part of the collection any and all such specimens as they may respectively desire as souvenirs."

In compliance with this provision of the will Mrs. Harris and her daughters, Miss Minnie Mildred Harris and Mrs. Laura H. Mosher have selected the following as souvenirs:

	Specimens.
Minerals	306
Recent shells	1,150
Arrow points from Oregon	100
Other archaeological specimens	50
Secondary and Tertiary fossils	250
Calymena callicephala (a trilobite)	100
Paleozoic fossils	250
Total	2,206

Yours respectfully,

CHARLES SCHUCHERT,
For U. S. National Museum.

- HILLYER, GEORGE, Atlanta, Ga.: Specimen of tale from Atlanta mine, Cherokee County, N. C. 33364.
- HINE, Prof. JAMES S., Ohio State University, Columbus, Ohio: Specimens of hymenoptera, diptera, and coleoptera, representing 25 species (33278); transmitted by Department of Agriculture: 4 specimens of *Ceratopogon guttipennis*, and 2 specimens of *Canophanes* sp. New to the collection. (33313.)
- HITCHCOCK, C. H., Hanover, N. H.: Geological material illustrating geological section across New Hampshire and Vermont. Exchange. 33528.
- HODLEY, DR. FRANK H.: Sixty-eight birds' skins from Greenland. 33392.
- HODGE, F. W., Bureau of Ethnology: Seven pay orders from Ecuador and an old French bank note. 32397.
- HODGMAN, Rev. S. C., Haines City, Fla.: Specimens of Coccids. 32603.
- HOECH, TH., Washington, D. C.: Four specimens, representing two species, of Isopods from Yokohama, Japan. 32352.
- HOFFMAN, SAMUEL W., Morristown, N. J.: Three photographs of a Persian Astrolabe. 33690.
- HOGAN, EDWARD A., Brooklyn, N. Y.: Beetle (*Alaus ocellatus* Linn.). 32317.
- HOLMES, S. J., Woods Hole, Mass.: Hermit crabs (*Pagurus annulipes* Stimpson) (32426); 2 specimens of an Isopod from San Pedro, Cal. (33296).
- HOLMES, Prof. W. H. (See under Field, Columbian Museum.)
- HOLUB, DR. EMIL, Vienna, Austria: Bohemian Cambrian fossils, collected by Dr. Jaraslans J. Jahn; birds' eggs and geological material from South Africa. 32736.
- HOLZINGER, Prof. J. M., Winona, Minn.: Taraxacum galls and parasites. 32456.
- HOLZNER, F. X., San Diego, Cal.: Two skeletons of *Carpodacus*. 32488.
- HOOD, LEWIS E., South Boston, Mass.: Small inlaid Turkish dagger from Erzeroum, Armenia; old miniature shell pocketbook, brought from England to America in 1800; old bronze candlestick from northern Spain, brought to the United States in 1876; small arrowpoint and other stone implements found in Franklin Park, Boston, Mass., June 5, 1889. 33152.
- HOPPING, RALPH, Kaweah, Cal.: Collection of coleoptera. 33549.
- HORAN, JOSEPH, U. S. National Museum: Two specimens of *Storeria dekayi* from Virginia, collected for the National Museum. 32836.
- HORNER, ROBERT M. (See under Agriculture, Department of.)
- HORTON, W. W., Washington, D. C.: Twelve teeth of fossil shark. 32481.
- HOUGH, DR. GERRY DE N., New Bedford, Mass.: Fifty specimens of diptera (33522); 50 specimens of diptera including type specimens (33717).
- HOUGH, DR. WALTER, U. S. National Museum: Twenty-five specimens of Triassic fossils, and 51 specimens of Cretaceous fossils from Arizona (32762); specimen of Poor Will (*Phalacroptilus*) from Arizona (32785); miscellaneous natural history material, collected in Arizona (32815).
- HOWARD, L. O., Department of Agriculture. Salamander from California. 33706. (See J. M. Stedman.)
- HUBBARD, HENRY G., Detroit, Mich.: Twenty-one specimens of *Ecritotarsus incurvus* Distant, from Phoenix, Ariz. (new to the collection) (32305); 105 specimens of insects from Arizona (32319); 4 specimens of *Lycomorpha latercula* Hy. Edwards (new to the collection) (32333); 121 specimens of hymenoptera from Arizona (32613); 81 beetles from Arizona (32626); 96 specimens of diptera and neuroptera from Arizona and California (32638); 17 specimens of Myrmeleionidae from Arizona (32671); 164 specimens of lepidoptera from Arizona (32746); 115 specimens of insects from Arizona (32831); 51 insects from Arizona (32897); 53 specimens of larvæ and other insects from Arizona (32942); 5 larvæ of *Dinapates wrightii* Horn (new to the collection) (32984); collection of coleoptera of North America, representing about 12,000 species, and constituting the private collection of Messrs. Schwarz and Hubbard (33101); 1,057 specimens of hemiptera from Arizona and California (33248).
- HUBBARD, LUCIUS L., Houghton, Mich.: Two specimens of powellite from Calumet, Mich. Exchange. 32981.

HUBER, WILLIAM. (See under Smithsonian Institution, Bureau of Ethnology.)

HUFFMAN, S. C., Pleasant Lake, Ind.: Larva of *Attacus cecropia* Linn. 32416.

HUGHES, Mrs. S. M., Corpus Christi, Tex.: Specimen of *Heterogamia bolliana* Saussure (32778); beetle (*Eleodes carbonaria* Say), and a caterpillar (*Papilio cresphontes* Cramer) (32950).

HULST, Dr. GEORGE D., Brooklyn, N. Y.: Types of 42 species of North American Geometridæ. 33384.

HUNTER ROBERT, St. Johns, Newfoundland: Skull of Porpoise (*Phocæna*) from Greenland. 32891.

HUNTER, WILLIAM, National Zoological Park; specimen of *Dryopteris cristata*, (32398); plants (32567, 32700, 32709, 32879, 33130); reptiles and batrachians from Missouri, Illinois, and Indian Territory. 33154.

IHERING, Dr. H. VON, Museu Paulista, São Paulo, Brazil. Shells, representing 41 species, from San Sebastian Island, Brazil. 32768.

IJIMA, Dr. I. (See under Tokyo, Japan, Science College, Imperial University.)

ILLINOIS, UNIVERSITY OF, Urbana, Ill. Twelve birds' skins from the East Indies. Exchange. 33340.

INDIAN MUSEUM. (See under Calcutta, India.)

INGERSOLL, J. C., Bowie, Md. Twenty-five shells, bird in alcohol, 10 insects, representing 6 species, 11 reptiles, 85 birds' skins from Honduras. Purchase. 32579.

INGERSOLL-SERGEANT DRILL COMPANY, New York City. Photographs of various types of drills and mountings. "O." 33523.

INLAND PRINTER COMPANY, Chicago, Ill. Specimen of "nature printing." 33338.

INSTITUTO FÍSICO-GEOGRÁFICO DE COSTA RICA. (See under Costa Rica.)

INTERIOR DEPARTMENT:

United States Geological Survey: Four boxes containing rocks and other material from California, Oregon, and Montana (32323); 39 specimens of invertebrate cretaceous fossils and about 24 specimens of plants (32654); 3 slabs of lingulas from the Medina sandstone at Lockport, N. Y., collected by Prof. G. K. Gilbert (32917);

INTERIOR DEPARTMENT—Continued.

United States Geological Survey—Cont'd. arrowheads, chips, flakes, etc., of obsidian found in Inyo County, Cal. (32975); 310 plants collected in Idaho and Montana by J. B. Leiberg (32990); 87 specimens of fossils from the Middle Cambrian (?) Ocell, and Chickamauga limestone of Tennessee, collected by E. O. Ulrich (33004); geological collections representing the Bidwell Bar, Downieville, and Chico quadrangles, collected by H. W. Turner (33010); selected collection of rocks representing the Sonora and Jackson quadrangles in the gold belt of California, collected by H. W. Turner (33040); 33 fossil plants from the San Pablo formation, north of Mount Diablo, Arizona, collected by H. W. Turner (33048); 9 specimens showing spheroidal weathering of shale, from the Cretaceous Shale (Chico), Shasta County, Cal., obtained by J. S. Diller (33108); fossil specimen from the Carboniferous strata of Gordon, Palo Pinto County, Tex., transmitted by Frank Burns (33122); specimen of goniatite; 3 Jurassic insects, 15 Ammonites and a slab of Triassic fishes, obtained from the Nashville Exposition exhibit (33172); geological material from Judith Mountains, Montana, collected by L. V. Pirsson and W. H. Weed (33189); 7 specimens of fulgurite from Telluride quadrangle, Rolling Mountain, Colorado; 2 specimens of telluride from Crested Butte quadrangle, Crested Butte; 4 specimens from the Elk Mountains quadrangle, from Castle Creek (33217); collection of rocks from the Little Rocky Mountains of Montana, assembled by Messrs. Walter H. Weed and L. V. Pirsson (33320); 49 specimens of Canadian rocks, collected by Prof. F. D. Adams, Montreal, Canada (33274); vertebrate and invertebrate fossils from Mississippi, collected by Frank Burns and L. C. Johnson (33318); 26 specimens of Cretaceous invertebrates, collected by L. C. Johnson from the "Tombigbee Sand," near Columbus, Miss. (33326); 285 plants, collected by

INTERIOR DEPARTMENT—Continued.

- United States Geological Survey*—Cont'd.
- M. W. Gorman in Washington Forest Reserve (33356); 200 plants, collected by T. S. Brandegee in the Teton Forest Reserve (33357); 67 crinoids, 170 shells, 385 shark's teeth, and 38 shark's spines, from the Lower Carboniferous at Quarry, Marshall County, Iowa (purchased by the Museum, on the authority of U. S. Geological Survey, for the Omaha Exposition) (33396); 36 specimens of aegerite syenite from the Judith Mountains, Montana (33401); a suite of rocks, collected and prepared by the Survey under the direction of Mr. J. S. Diller (33403); 562 crinoids from the Kinderhook formation at Quarry, Marshall County, Iowa (purchased from J. McCabe through the Geological Survey, (33417); 20 specimens of fossils (from Omaha Exposition Exhibit) (33668); rocks from Bear Paw Mountains and Judith Mountains, Montana, collected by W. H. Weed (33469). (See under Arthur Bibbins; James F. Kemp; J. E. Olive; R. S. Spence.)
- IRWIN, W. N., Eckington, D. C.: Specimen of an evergreen blackberry (32665); plant (32706); 71 specimens of dike rocks from eastern New York and western Vermont, and 45 thin sections, collected by Prof. T. Nelson Dale (33710).
- JACKSON, VICTORIA, Bowling Green, Ky.: Land shells, representing two species. 33739.
- JAHN, DR. JARASLAUS J. (See under Dr. Emil Holub.)
- JAMES, FOREST, Grand Mound, Wash.: Longicorn-beetle, *Rosalia funebris* Mots (32417); specimen of *Dasyllis pesticata* Say (33676).
- JAMES, I. E., Pittston, Pa.: Earthworms and mud from a coal mine near Pittston (32379); Horn-tailed Sawfly (32508).
- JAMMES, Prof. L., Mazerès, Areige, France: Implements, ornaments of stone, bone, ivory, and shell, and pottery from Cambodia, Indo-China. Purchase. 33074.¹
- JARVIS, P. W., Colonial Bank, Kingston, Jamaica: Two specimens of *Liomera dispar* and *Panopeus* from Jamaica. 32588.
- JENKINS, C. FRANCIS, Washington, D. C.: Collection of chrono-photographic apparatus. Loan. 33057.
- JENKINS, W. D., Tarpon, Tex.: Four specimens of Thread Herring, *Opisthonema oglinum*, and a specimen of Scaled Sardine, *Sardinella pensacola*. 33223.
- JENNE, ELDRED L., Coupeville, Wash.: Land, fresh-water, and marine shells from Washington, representing nine species. 33641.
- JENNEY, W. P., Black Hills, S. Dak.: Specimen of *Viola delphinifolia* from near Deadwood. 33674.
- JEPSON, W. L., University of California, Berkeley, Cal.: Eighteen plants (32704); 27 plants from California (33046).
- JERMY, G. (See under J. G. Smith.)
- JOHN, ANDREW, Washington, D. C.: Snow-snake, Iroquois wooden cradle, board, basket, and a beaded reticule (purchase) (33084); samples of corn and beans raised by the Iroquois Indians (33142); 2 loaves of bread made from Indian corn and boiled beans (33271).
- JOHNSON, A. J., Astoria, Oreg.: Specimens of *Oreobroma tweedyi* (32412); 6 plants (32696).
- JOHNSON, Prof. C. W., Wagner Institute, Philadelphia, Pa.: Type specimens of diptera, representing four species (32560); 7 specimens of hymenoptera (32885).
- JOHNSON, J. L., Duffield, Va.: Nine arrow points, stone ax, a pebble, and a brass button. Exchange. 32326.
- JOHNSON, L. C. (See under Interior Department, U. S. Geological Survey.)
- JOHNSON, W. H., Olaa, Hawaii: Coffee leaves infested with a species of *Aleyrodes*. 32444.
- JOHNSON, WILLIAM H., Wamsley, Ohio: Crab spider, *Acrosoma spinea* Hentz. 32460.
- JOHNSTON, Mrs. ELIZABETH E., Los Angeles, Cal.: Marine shells from San Pedro, Cal., representing 7 species. 33499.

¹This accession was entered in the Museum Report for 1894 as a deposit by Dr. Thomas Wilson.

- JOHNSTON, FRANCES B., Washington, D. C.: Collection of pictorial studies, portraits, etc. Purchase. 33061.
- JOHNSTON, FRANK J., New Carlisle, Ohio: Horse-hair worm. 32353.
- JOHNSTON, Mrs. H. D., Los Angeles, Cal.: Marine shells, representing two species from California. 33643.
- JONES, Prof. A. H., Kansas Wesleyan University, Salina, Kans.: Nine specimens of Cretaceous invertebrates from the Dakota and Mentor beds of Central Kansas. 32702.
- JONES, MARCUS E., Salt Lake City, Utah: One hundred and five plants (exchange) (33030); 536 plants (exchange) (33089); 800 plants (purchase) (33306).
- JORDAN, Dr. D. S. (See under R. C. McGregor.)
- JUDSON, Mrs. ISABELLA FIELD, Dobbs-Ferry-on-Hudson, New York: Seal of Cyrus W. Field, calico mask worn by him in South America, and seven of his autograph letters. Deposit. 32555.
- JUSTI, HERMAN, Nashville, Tenn.: Souvenir badge of "Nashville Day" at the Exposition, 1897. 32996.
- K. K. NATURHISTORISCHES HofMUSEUM, Botanische Abtheilung. (See under Vienna, Austria.)
- KANE, Miss, Washington, D. C.: Crayfish. *Cambarus propinquus* Girard. 33511.
- KANSAS, STATE UNIVERSITY OF, Lawrence, Kans., transmitted through Prof. I. W. Williston: Fossil bones representing the genera *Clidestes*, *Tylosaurus*, and *Platycarpus* (purchase), "O." (33487); 2 boxes Carboniferous shale with crinoids (exchange) (33188).
- KEARNEY, T. H., jr., Washington, D. C.: Two hundred and seventy-seven plants from Tennessee (purchase) (32910); 61 plants from Washington, D. C. (gift) (33208); 42 plants (33738).
- KEATLEY, J. H., Washington, D. C.: Eight carved-horn spoons from Alaska, and an ivory carving of a bird's head (33437); totem carvings in black slate from Alaska (33170, 33482). Purchase.
- KEILEY, JOSEPH T., New York City: Forty-seven Indian relics from North Carolina and Tennessee. 33216.
- KELKER, WILLIAM A., Harrisburg, Pa., transmitted by the Bureau of Ethnology: Clay model of a boat-shaped object found in Harrisburg. 32866.
- KELLY, HARRY M., Cornell College, Mount Vernon, Iowa: Specimen of living unio (32797); specimens of *Unio tuberculatus* from Illinois (33687).
- KELSEY, F. W., San Diego, Cal.: Marine shells from California and Japan, representing 50 species. 33574.
- KEMP, Prof. JAMES F., New York City, transmitted by the U. S. Geological Survey: Geological material from New York. 32346.
- KENT SCIENTIFIC INSTITUTE, received through C. A. Whittemore, Grand Rapids, Mich.: Specimen of *Bassaricyon gabbi* (for remounting in exchange for specimens). 33099.
- KETCHAM, Mrs. L. A., Mount Pleasant, D. C.: Hurdy-Gurdy, owned by the Ketcham family for seventy-five years. 32522.
- KIMBLE, G. W., Placerville, Cal., received through H. W. Turner: Two specimens of Ammonites. 33673.
- KINCAID, TREVOR, University of Washington, Seattle, Wash.: Shells from Alaska, representing about 60 species. 32883.
- KING, Dr. C. L., Jacksonville, Fla.: Two tomato caterpillars with parasitic cocoons; spider. 32459.
- KING, GEORGE B., Lawrence, Mass., received through Department of Agriculture. Types of two new species of ants, *Pheidole townsendi* André, and *Pheidole kingi* André, from Mexico (new to the Museum collection). 33339.
- KING, W. H., Langdon, D. C.: Ferns collected in 1876 and 1885 at St. Helena, Cape Town, Africa, islands in the Indian Ocean, Madagascar and Brazil. 32971.
- KINGMAN, C. C., Reading, Mass.: Specimen of *Salix bebbiana* (33581); 8 specimens of violets (33020).
- KINGSLEY, Prof. J. S., Tufts College, Mass.: Three specimens of Shrimp (*Caradina pasadenae* Kingsley) from Pasadena, Cal. 32556.
- KINGSTON, JAMAICA, Institute of Jamaica: Seven specimens of crustaceans. 33100.
- KIRKLAND, Dr. R. J., Grand Rapids, Mich.: Living unios from Michigan (32539); living unio from Grand Rapids, representing one species (32633); unio from Georgia (32765); unios from Alabama (32964).

- KIRKPATRICK, J. A., Sparta, Ill.: Specimens of Pleistocene coniferous fossil wood found in a coal bank about 80 feet below the surface. 32987.
- KIRSCH, Dr. P. H., Phoenix, Ariz.: Shell of *Pyramidula strigosa* (32471); specimens of *Epiphragmophora* from Catalina Island, California (32679); 10 specimens of Lower and Upper Silurian fossils from Mount Franklin (33464).
- KISHINOUE, K., Imperial Fisheries Bureau, Tokyo, Japan: Type specimen of *Chrysaora gilberti* Kishinouye, from California. Exchange. 33244.
- KIZER, Dr. D. T., Clinton, Mo.: Land and fresh-water shells from Clinton, representing 7 species. 33027.
- KLAGES, EDWARD A., Grafton, Pa.: Pine-tree lizard. 32608.
- KNOWLES, C. J. A., Tampa, Fla.: Specimen of *Castalia flava*. 32955.
- KNOWLTON, F. H., U. S. Geological Survey: Thirty plants. 33698. (See under W. W. Eggleston.)
- KNOWLTON, W. J., Boston, Mass.: Specimens of calcite and galena from Joplin, Mo. (32350); gem (32587). Purchase.
- KOEBELE, A. (See under Agriculture, Department of.)
- KÖNIGLICHES BOTANISCHES MUSEUM. (See under Berlin, Germany.)
- KRAUSS, ALFRED, U. S. consular agent, Zittau, Saxony, Germany: Nineteen specimens of Mesozoic European fossils, and 33 geological specimens. 33285.
- KRUEGER, P. W., Cleveland, Ohio: Insects. 33332.
- LACOE, R. D., Pittston, Pa.: Seventy-two mounted microscopic sections of Carboniferous fossil plants from the lower coal measures of Great Britain (33195); 15 boxes containing a collection of fossils (33678); 38 specimens of fossils from Peru, South America (33696).
- LACROIX, Prof. ALFRED, Paris, France, received through Alfred H. Brooks, U. S. Geological Survey: Minerals. 33365.
- LAMB, F. H. (See under Agriculture, Department of.)
- LAMBIE, J. B., Washington, D. C.: Tools to complete a special series for exhibition at the Omaha Exposition. Purchase. 33414.
- LANDVOIGT, EDWARD, Washington, D. C.: Specimen of Red Phalarope, (*Gymophi-*
- LANDVOIGHT, EDWARD—Continued.
lus fulicarius, from Potomac River. 32713.
- LANGDON, AMANDA, Canaan, Conn.: Specimen of *Sphinx carolina* L. 32986.
- LANGSHAW, J. P., New Bedford, Mass.: Stone pestles, gonges, hatchets, and arrow heads. 32454.
- LAZIER, Dr. A. M., Morgantown, W. Va.: Unfinished banner stone. 32790.
- LEE, HARRY A., Denver, Colo.: Ores from Colorado. Exchange. 33319.
- LEE, J. W., Baltimore, Md.: Specimen of zoisite and thulite in albite, from Wight's gneiss quarry, Stony Run, North Baltimore, Md. 32307.
- LEE, THOMAS, Washington, D. C.: Thirteen ethnological objects from Alaska and Arizona (33019); specimen of Shoveler, *Spatula clypeata* (33451). (See also under Smithsonian Institution.)
- LEIBERG, J. B. (See under Interior Department, U. S. Geological Survey.)
- LELAND STANFORD JUNIOR UNIVERSITY, Stanford University, Cal., received through Prof. C. H. Gilbert. Cotype of *Rimicola muscarum* from Monterey Bay, also type of *Oligoplites mundus*. 33421. Exchange. (See under Fish Commission, U. S., and Fur Seal Commission.)
- LEMMON, J. G., North Temescal, Cal.: Specimen of *Podistera nevadensis*. 33582.
- LETSON, Miss JENNIE E., Buffalo, N. Y.: Seven specimens of living unios from Buffalo, N. Y. 32537.
- LIMA, PERU: Sociedad Geografica: transmitted by Enladio Delgado: Miscellaneous collection of insects from the Valley of the Pichis and the Perene, central Peru, 2,000 to 3,000 feet altitude. 32362.
- LINDGREN, W. (See under N. F. Drake.)
- LINDSAY, MRS. WILLIAM. (See under Daughters of American Revolution.)
- LINK, E. S. Jefferson City, Mo.: Specimen of moss. 32724.
- LINTNER, Prof. J. L., Albany, N. Y.: Specimens of *Lasius interjectus* Mayr. 32629.
- LOCHMAN, C. L., Bethlehem, Pa.: Forty-two photographs of medicinal plants. Purchase. 33600.
- LONDON, ENGLAND: Geological Society of. Seven specimens of fossil coral. Exchange. 33598.
- LONG, Hon. JOHN D. (See under Navy Department.)

- LONG, SAMUEL S., York Pa.: Stone disc from Havana, Mason County, Ill. 32690.
- LOOMIS, Rev. H., Yokohama, Japan: Land, fresh-water, and marine shells from Japan, representing 40 species (33575); marine shells from Japan (33618).
- LORING, J. ALDEN, Department of Agriculture: Stone pestle obtained from a "Siwash" grave at Oroville, Wash. 32655.
- LOTSPEICH, A. C., Newport, Tenn.: Larva of *Citheronia vegalis* Fabr. 32618.
- LOUNT, S. D., & SON, Phoenix, Ariz.: Specimen of Solpugid, *Datames formidabilis* Simon. 32576.
- LOVELL, JOHN H., Waldoboro, Me., transmitted by Department of Agriculture: Sixty-nine species of hymenoptera. 33255.
- LOWE, HERBERT N., Long Beach, Cal.: Marine shells, representing 7 species. 33634.
- LOWE, V. H., Geneva, N. Y.: Three specimens of *Aphidius polygonaphis* Fitch. 32490.
- LOWERY, C. O., Smithland, Ky.: Crab spider, *Aerosoma rugosum* Hentz. 32422.
- LOZIER, Mrs. A., Washington, D. C.: Shuttle for a primitive heddle frame. 32041.
- LUCAS, F. A., U. S. National Museum: Birds from Pribilof Islands (32597); skins and skulls of mammals (32713).
- LUGGER, Prof. O., St. Anthony Park, Minn.: Ten specimens of *Apanteles* sp. from Germany. 33254.
- LUMHOLTS, Dr. (See under Dr. B. L. Robinson.)
- LUMSDEN, G. R., Greenville, Conn.; Forty-one specimens of insects. 32519.
- LYONS, HERBERT F. W., Boston, Mass.: Fourteen proofs of wooden engravings executed by the donor. 32721.
- MCCABE, JOHN, Quarry, Iowa: Three small slabs with Kinderhook erinoids. 33348.
- MCCARDLE, JOHN, Leamington, Utah, received through the Bureau of Ethnology: Trilobite. 33627.
- MCDANIEL, W. L., Sulphur Springs, Tex.: Land shells, representing 3 species. 32818.
- MCDILL, J. T., Sparta, Ill., Specimens of Pleistocene coniferous fossil wood, found on a coal bank about 80 feet below the surface. 32987.
- McFARLAND, Miss MARY, Washington, D. C.: Toy model of a stove, rice-pot, rice-stirrer, curry-pot, and water-ladle, from Siam. 33358.
- MCGREGOR, R. C., transmitted by Dr. D. S. Jordan, Stanford University, Cal.: Type specimens of *Apogon atricauda*, *Forcipiger flavissimus*, and *Brachyistius frenatus*, from Socorro and Guadalupe Islands (gift) (32819); 4 specimens of ground owls from California (gift) (33166); 22 birds' skins from California and the western section of the United States (exchange) (33180); skin of *Ammodramus halophilus* and 2 skins of *Ammodramus sanctorum* (gift) (33625).
- McKINLEY, Hon. WILLIAM, President of the United States: Mounted head of a Texas steer. 33495.
- McLANAHAN, J. KING. (See under Pennsylvania Railroad Company.)
- McMILLAN, P. A., Banyan, Fla.: Skull of Black Skimmer, *Rynchops nigra*. 33546.
- McQUEEN, E. L., Dublin, Tex.: Larva of a small moth (*Lagou pyridifera* A. and S.). 32681.
- MACDONALD, Mrs. MARSHALL, Washington, D. C.: Oil portrait of Gen. George Washington. 33381.
- MACEV, C. F., Conneil, Idaho: Two specimens of *Cantharis cyanipennis* Say. 33616.
- MACKAY, GEORGE H., Boston, Mass.: Thirteen skins of birds of the United States and Cape of Good Hope. 33205.
- MAGER, Miss ERNESTINE, Wallhalla, N. Dak.: Collection of plants. 33144.
- MAGRUDER, Mrs. E. A. H., Tennallytown, D. C.: Collection of Roman antiquities, consisting principally of pottery and bronze objects. 33321.
- MANN, GUSTAVE, Munich, Germany: Ferns from the province of Assom. Purchase. 33419.
- MANN, Miss LIZZIE J., Upperville, Va.: Great Horned Owl, in the flesh. 32675.
- VON MARENZELLER, Dr., Vienna Museum, Vienna, Austria: Parasite (lent); parasites (exchange). 32341.
- MARINO, FRANK, Washington, D. C.: Snake from the District of Columbia. 33118.

- MARLATT, C. L. (See under William T. Davis.)
- MARSHALL, GEORGE, U. S. National Museum: Two young specimens of *Lepus sylvaticus*, from Laurel, Md. (33422); crayfish and sunfish from Laurel, Md. (33530); frog, *Rana sylvatica*, from Maryland (33623).
- MARSHALL, HENRY, U. S. National Museum: Pair of Florida Gallinules from Florida. 33423.
- MASON, Prof. O. T., U. S. National Museum: Seven photographs of Polyneesian objects. 33740.
- MATHEWS, E. O., Mexico, Mexico. Forty-two archæological objects from Mexico. Purchase. 33214.
- MATTHALL, L. C., Snoqualmie, Wash.: Spider, *Epeira trifolium* Hentz. 32612.
- MATTHEW, Dr. G. F. (See under New Brunswick, Canada: Natural History Society of New Brunswick.)
- MATTHEWS, ROBERT, Home City, Ohio: Specimen of *Canis familiaris*. 32525.
- MAURY, Miss CARLOTTA J., Cornell University, Ithaca, N. Y.: Specimens of *Anodonta edcutula* from Chautauqua Lake, New York. 33088.
- MAXON, W. R., Oneida, N. Y.: Specimen of *Dryopteris bootlii*. 32515.
- MAYER, Dr. O. B., Newberry, S. C.: Two specimens of a scarabæid beetle, *Dynastes tityus* Linn.
- MAYNARD, GEORGE C., U. S. National Museum: Collection of telegraphic apparatus (33261); electric gas-lighting torch (33298). Deposit. (See also under Telegraphic Historical Society of North America.)
- MEAD, G. D., San Francisco, Cal.: Bird's nest. 33650.
- MEADE, Miss FLORENCE, West Salisbury, Vt.: Specimen of *Dicerca divaricata* Say. 32666.
- MEARNS, Dr. E. A., U. S. Army, Fort Myer, Va.: Mole, *Scalops aquaticus*, from Fort Myer, Virginia (32325); specimen of *Achillea millefolium* (32359); 6 birds' skins from Virginia (32385); 2 specimens of *Eptesicus fuscus* from Washington, D. C. (32469); land and fresh-water shells (33256), (33311), (33325), (33375); living unios from Texas, representing three species (33480); 3 birds' skins from the western part of the United States (33550);
- MEARNS, Dr. E. A.—Continued.
land and fresh-water shells and alcoholic specimens from Texas (33589); series of mammals, 51 birds' skins, crustaceans, insects, fossil shells and plants (33693).
- MEARNS, LOUIS DI Z., Fort Myer, Va.: Specimen of *Sitta canadensis*, from Virginia (gift) (32386); specimen of *Scalops aquaticus* (gift) (32501); 38 birds' skins (deposit) (32867); 2 caterpillars of *Citheronia regalis* Fabr. (gift) (32980); 2 alcoholic specimens of caterpillars of *Citheronia regalis* Fabr., bat, mole, and 3 snakes from Fort Myer, Va. (32980).
- MEEK, F. B., estate of, received through W. J. Rhees, administrator: Marine shells from the coast of Florida, 5 starfishes, 3 echinoids, and a land tortoise. 33520.
- MEEKER, L. L., Darlington, Okla.: Received through Bureau of Ethnology. Indian game. 33596. (See under Smithsonian Institution, Bureau of Ethnology.)
- MEIJERE, Dr. J. C. H. DE, Amsterdam, Holland: Three hundred and seventy-three specimens of diptera. Exchange. 33424.
- MERRIAM, Dr. C. HART, Chief, Biological Survey, Department of Agriculture: Collection of mammals, consisting of about 5,000 skins and 6,000 skulls (private collection of Dr. Merriam (33212); marine shells from Bermuda (33633).
- MERRILL, Dr. G. P., U. S. National Museum: Fossils, minerals, and shells from Russia (32761); specimen of *Coccinella 7-punctata* from Budapest, Hungary (32925); salt and graphitic schist from Germany and andesite from Turkey (32940); berry basket made of birch bark from east European Russia (32947); 9 plants from Europe (32949); rocks and ores from a silver mine in Pribram, Bohemia, and coal from Karbitz, Bohemia; shells from Budapest, Hungary (32958); phosphate nodules, 115 specimens of fossils (32991); shells, fossils, and geological material from Russian Armenia and the Caucasus (33094); specimens of rock salt from Heilbrun, Prussia (33309); photograph of Ossetes, soldiers of the Caucasus mountains, Russia (33588).

- METCALF, O. (See under Agriculture, Department of.)
- METCALFE, J. K. (See under Agriculture, Department of.)
- MIDDLETON-WAKE, Rev. CHARLES H., Kent, England: Copy of "Catalogue of the engraved work of Albert Durer," by Mr. Middleton-Wake (32720); and of "The Invention of Printing" (33053).
- MILLER, GERRIT S., jr., U. S. National Museum: Lizard from Kensington, Md. (33597); snake and 2 plants from Kensington, Md. (33645); moths representing 17 species (gift) (33704).
- MILLER, H. M. A., San Francisco, Cal.: Twelve photographs of plants from Lower California, Mexico, 33231.
- MILLS, E. W., Webster Grove, Mo.: Rude notched axe from Missouri. 32308.
- MILLSPAUGH, C. F. (See under Field Columbian Museum.)
- MINNESOTA, UNIVERSITY OF, Minneapolis, Minn., transmitted by A. A. Heller: Violets from different localities. Exchange. 32888.
- MISSOURI BOTANICAL GARDENS, St. Louis, Mo.: Two specimens of *Cleome gigantea* and 15 specimens consisting principally of *Lemna* (gift) (32780); transmitted by J. B. S. Norton: specimen of *Lilaeopsis carolinensis* (exchange) (33069).
- MITCHELL, G. E., Washington, D. C.: Three eggs of woodcock from Virginia. 33347.
- MITCHELL, Hon. J. D., Victoria, Tex.: Crabs, shrimps, and insects from Texas (32447); specimen of *Glandina* and eggs from Victoria (32470); 2 specimens of unios (32536); living Unionidae from Victoria (32605); collection of insects (32668); living Unionidae (32791); flatfish (*Baostoma brachiale*) and crustaceans from Matagorda Bay, Texas (32802); marine shells, representing 10 species (32809); land, fresh-water, and marine shells from Texas, representing 8 species (32934); 3 specimens of *Callinectes* from San Antonio Bay (33652); 2 plants (33725). (See under J. Forrester.)
- MITSUKURI, K., University of Tokyo, Tokyo, Japan: Alcoholic specimen of shark (*Chlamydoselachus*). 32839.
- MOCK, M. G., Manee, Ind.: Three flint arrowheads and a photograph of stone, copper, and shell objects. 32583.
- MOFFATT, Dr. S., Wheaton, Ill.: Thirty plants. Exchange. 33508.
- MOFFATT, W. S., Chicago, Ill.: Medicinal plants. 33567.
- MOHR, Dr. CHARLES, Mobile, Ala.: Sixteen plants (32321); specimen of *Telanthera philoxeroiles* Moq. (33198).
- MOISSAN, M. HENRI, Paris, France, transmitted by Mr. C. A. Doremus: Series of specimens of metals, carbides, and borides, illustrating the products of the electric furnace. 32448. Presented to the Smithsonian Institution and deposited in the National Museum.
- MONROE, Charles E., Milwaukee, Wis.: Twenty-four specimens of Hamilton group brachiopods. 33707.
- MONROE, W. A. (See under R. J. Redding.)
- MOONEY, JAMES. (See under Smithsonian Institution, Bureau of Ethnology.)
- MOORE, C. R., Birdsnest, Va.: Mold for making pewter tablespoons, used by the early settlers of Virginia. 32509.
- MOORE, CLARENCE B., Philadelphia, Pa.: Three shell drinking cups and a large number of shell beads obtained from a mound in the northeastern end of Creighton Island, McIntosh County, Ga. (33038); fossil oysters from Griffin Landing, Ga. (33328); transmitted through Army Medical Museum: 3 skulls of Florida mound-builders (33669).
- MOORE, P. A., Rifle, Colo.: Flint chip-pings and broken arrow points from Garfield County, Colo. 32558.
- MORAN, C. A., Baltimore, Md.: Specimen of *Dynastes tityus* L. 32547.
- MORGAN, Dr. E. L., Washington, D. C.: Specimen of chipmunk (*Tamias striatus*), from Fauquier County, Va. (32660); flying squirrel, *Sciuropterus volucella* (32926); specimen of *Sciuropterus*, two specimens of *Scalops aquaticus* (33659); gray squirrel, *Sciurus carolinensis* (33202).
- MORRIS, E. L., Washington, D. C.: Twenty-five plants. 32989.
- MORRIS, W. C., Marcus, Wash.: Specimen of *Mantissa brunnea* Say. 32610.
- MORSE, EDWARD LIND, Washington, D. C.: Pocket telegraph instrument. Professor Morse's note-book, passport; autograph letters. Deposit. 33377.

- MOSHER, R. F. (See under Harris, I. H., estate of.)
- MOSIER, C. A., Des Moines, Iowa: Fossil mollusk of ancient form taken from clay drift, and a small fragment of a drift boulder. 32467.
- MOSS, WILLIAM, Aston-under-Lyne, England: Two photographs of soft parts of English land snails (32617); specimens of *Unio pictorum* and *Anodonta cygnea* (32465); specimens of *Margaritana margaritifera* from Ireland (32863).
- MOSHER, B. F. (See under Harris, I. H., estate of.)
- MOTTER, Dr. M. G., Department of Agriculture: Specimens of *Vitrea minuscula*. 32368.
- MOURNING, NELSON, Washington, D. C.: Single-barreled, self-action, flat-hammer pistol, found on Columbia Heights, District of Columbia. 33470.
- MUNICH, GERMANY, Geologisch-Palaeontologisches Institut: Two hundred and forty specimens of Tertiary corals, representing 94 species. Exchange. 33246.
- MURCH, CLARENCE, Cairo, Egypt: Fossil tooth of shark (*Carcharodon auriculatus*). 33097.
- MURPHY, J. K., Washington, D. C.: Vertebra of Dinosaur. 33153.
- MUSEO CIVICO DI STORIA NATURALE. (See under Genoa, Italy.)
- MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Mass., transmitted by Dr. Walter Faxon: Fresh-water crabs, representing 5 species; exchange (32750); crabs (*Portunidae*), representing 12 species (gift) (33323).
- MUZEI IMPER. AKADEMII NAUK. (See under St. Petersburg, Russia.)
- NASHVILLE EXPOSITION EXHIBIT. (See under Interior Department, U. S. Geological Survey.)
- NATIONAL PEARL BUTTON COMPANY, Davenport, Iowa, transmitted by H. C. Pembeck, secretary: Valve of a union, also powder ground from their shells. 32859.
- NATIONAL SOCIETY, D. A. R., received through Mrs. William Lindsay, Washington, D. C.: A "Mayflower chest" and a comb, both presented to the society by Mrs. Adrian V. S. Schenck. Deposit. 33297.
- NATURAL HISTORY SOCIETY OF NEW BRUNSWICK. (See under New Brunswick, Canada.)
- NAVARRO, Anibal Villa, Barranquilla, Colombia, South America: Specimen of "Enforbina," an antidote for snake bite. 33050.
- NAVY DEPARTMENT, transmitted by Hon. John D. Long, Secretary: Medal of honor bestowed by the Navy Department upon enlisted men of the Navy and Marine Corps for extraordinary services. 33363.
- NEAL, DANIEL R., jr., Washington, D. C.: "Pepper-box" revolver, 1837. 32994.
- NELSON, AVEN, Laramie, Wyo.: Twenty-two plants collected in Wyoming. Exchange. 33143. (See under Agriculture, Department of.)
- NELSON, E. W., Washington, D. C.: Two photographs of women: Valley of Mexico. 33294. (See under Agriculture, Department of, and Mrs. N. M. Brown.)
- NESMITH AND CONSTANTINE COMPANY, New York City: Large block of mahogany bored by *Teredo*. 33213.
- NESS, Prof. H. (See under Agriculture, Department of.)
- NEW BRUNSWICK, CANADA: Natural History Society of New Brunswick, St. John, transmitted by Dr. G. F. Matthew, curator: Thirty-three specimens, representing 20 species of fossil plants from St. John, New Brunswick. 33308.
- NEWELL, CHARLES F. (See under Brookdale Museum of Natural History.)
- NEW MEXICO AGRICULTURAL EXPERIMENT STATION, Mesilla Park, N. Mex., received through Prof. J. D. A. Cockrell: Miscellaneous collection of insects from New Mexico, including 128 specimens containing types and cotypes (32357); 2 specimens of hemiptera and 15 specimens of hymenoptera (32395); 23 specimens of hymenoptera (32774); 24 specimens of hymenoptera, 34 specimens of lepidoptera, including 4 types and 6 cotypes (33601); specimen of *Hesperaspis elegantula* (33705).
- NEW YORK AQUARIUM, New York City: Specimen of *Mullus auratus*. 33003.
- NEW YORK COLONIZATION SOCIETY, New York City: Marine shells, representing 6 species, crustaceans, fishes, reptiles,

- NEW YORK COLONIZATION SOCIETY—Continued.
and mammals from Monrovia, Liberia, West Africa, collected by Mrs. J. D. Sharp, Mr. G. N. Collins, Rev. G. P. Goll, and Prof. O. F. Cook. 32600.
- NIEDERLEIN, GUSTAVO, Philadelphia, Pa.: Eighteen plants from Central America. 33536.
- NIX BROTHERS, Mount Pleasant, near Charleston, S. C.: Specimens of insects infesting asparagus. 32521.
- NORRIS, ISAAC T., Baltimore, Md.: Four photographs of seine-hauling at Havre de Grace. 32733.
- NORTON, J. B. S. (See under Missouri Botanical Garden.)
- NOZAWA, Prof. S. (See under Dr. L. Stejneger.)
- NYLANDER, O. O., Caribon, Me.: Five hundred specimens, representing 40 species of land and fresh-water shells, from northern Maine (exchange) (32606); specimens of *Margaritana margaritifera* (gift) (32661); land and fresh-water shells from Maine, representing 15 species (exchange) (32862).
- OEHME, Dr. F. G., Roseburg, Oreg.: Specimen of *Polycodon confertus* Lec., and its work. 32505.
- OGBURN, B., Phoenix, Ariz., transmitted through Bureau of Ethnology: Fragment of an ancient ceremonial cigarette found in a sacrificial cave near Tempe, Ariz. (33023); 2 specimens of a Darter (*Etheostoma sciottense*) from Big Walnut Creek, Scioto River, near Columbus, Ohio (33135).
- OGDEN, Capt. T. S., transmitted by C. H. Townsend, U. S. Fish Commission: Crab (*Calappa calappa* Linnaeus), from Gnam Island, Ladrone Group. 32584.
- OGLBY, J. Douglas, Livingston road, Petersham, Sydney, New South Wales: Alcoholic specimens of Australian fishes. Exchange. 33031.
- OLDROYD, Mrs. IDA M., Los Angeles, Cal.: Marine shells, representing 3 species, from California (gift) (33117); corals from the coast of California (exchange) (32301); marine shells from San Pedro, California (32822).
- OLDS, H. W., Woodside, Md.: Specimen of *Polemonium reptans* (32360); plant (32574).
- OLIVE, J. E., Bastrop, Tex., transmitted by U. S. Geological Survey: Decomposed feldspar. 32453.
- OLNEY, Mrs. M. P., Spokane, Wash.: Two species of *Anodontia*. 32641.
- OMAHA EXPOSITION EXHIBIT. (See under Interior Department, U. S. Geological Survey.)
- ORR, LYCURGUS, Gallop, Mont.: Ironstone concretions. 32535.
- ORTMANN, RICHARD. (See under Smithsonian Institution.)
- OSBORN, H. L., Hamline University, St. Paul, Minn.: Fresh-water shells from Minnesota. 33557.
- OSGOOD, W. H., Biological Survey, Department of Agriculture: Twenty-five skins of birds of the United States. Exchange. 33182.
- OTIS, FRANK L., Mesalero, N. Mex.: Virginia rail in the flesh. 33150.
- OTTENBERG, Miss, Washington, D. C.: Mezuzah. 33524.
- PAINE, R. G., Washington, D. C.: Boa constrictor. 32354.
- PALMER, EDWARD: Earthworms and entomostraca, fresh-water shells, insects, geological material, archaeological objects, and reptiles from Mexico (purchase) (32559); specimen of *Capsicum annum* (gift) (32933); 2 plants from Mexico (gift) (33111); 2 photographs of palm-wine tuba sellers, Colima, Mexico (gift) (33191); shells, crustaceans and earthworms, archaeological objects, ethnological objects from Mexico (gift) (33215). (See under Department of Agriculture.)
- PALMER, JOHN W., Delaware County Institute of Science, Media, Pa.: Microscopic slide containing *Homocladia filiformis*. 33280.
- PALMER, J. W. (See under Royal Arch Masons, Grand Chapter, State of New York.)
- PALMER, WILLIAM, U. S. National Museum: Seventeen mammal skins and skull from Dismal Swamp, Virginia (32306); fox squirrel, *Sciurus cinereus*, from Hampstead, King George County, Va. (32329); specimen of *Lynx rufus* (gift) (32338); specimen of salamander from Virginia (32377); queen snake, *Tropidonotus leberis* (32449); specimen of *Neotoma floridana*, specimen of *Vesperugo*, and 3 specimens of *Atalapha*

PALMER, WILLIAM—Continued.

- borealis* (32475); shrike from Falls Church, Va. (gift) (33584); collection of natural-history specimens from Smith's Island, Virginia (32651); skunk *Mephitis mephitis* (32744); plant from Scott Run, Fairfax County, Va. (32782); specimen of Turnstone, *Arenaria morinella* (32787); 2 plants from Nashville, Tenn. (32923); 5 specimens of Trenton fossils from Nashville, Tenn. (32968); small collection of insects from Nashville, Tenn. (32983); marine shells and invertebrates from Smith's Island, Virginia (33631); 2 rabbits from Smith's and Fisherman's Islands, Virginia (33666); 2 specimens of *Rubus odorata* from Great Falls, Va. (33670). (See also under Dr. C. K. Clark.)
- PAMMEL, L. H., Ames, Iowa, received through Department of Agriculture: Two hundred and forty-eight plants collected in Iowa (33435); 122 plants (33629) exchange.
- PAPE, C. W., Manhattan, Kans.: Five skins and skulls of mammals, consisting of 3 spotted skunks, mole, and gopher. 32623.
- PARISH, S. B., San Bernardino, Cal.: One hundred plants from southern California. Purchase. 32969.
- PARKE, DAVIS & Co., Detroit, Mich.: Series of specimens illustrating biological products and curative sera. 33542.
- PARKER, CHARLES. (See under M. V. D. Badie.)
- PARKER, DR. E. PENDLETON, Washington, D. C.: Specimens of oligochaetous worms from the Potomac River. 33092.
- PARKER, J. B., Danville, Ohio.: Unionidæ from Ohio. 33724.
- PARKER, R. WAYNE, Newark, N. J.: Specimens of zinc ores from New Jersey mines. 32688.
- PARLIN, J. C., North Berwick, Me.: Seven specimens of *Antennaria parlinii*. 33509.
- PARTCH, Rev. V. F. (See under Chinanfu, China, Chinaanfu Museum.)
- PATTERSON, A. J., U. S. consul, Demerara, British Guiana: Five birds' skins from British Guiana. 32920.
- PAUL, Miss FLORENCE, Washington, D. C.: Larva of *Lagoa crispata* Peck. 32526.
- PAYNE, ELIAS J., Olympia, Wash.: Specimens of building stones. 32523.
- PECKHAM, Prof. G. W., Haitland, Wis.: Three specimens of fossorial wasps (new to the collection). 32428.
- PEDRICK, W. E., Interior Department, U. S. Geological Survey, transmitted through C. W. Cross: Specimen of tetrahedrite from Good Hope Mine, Colo. 33723.
- PEMBECK, H. C. (See under National Pearl Button Company.)
- PENNOCK, F. M. (See under Quaker City Fruit Company.)
- PENNSYLVANIA RAILROAD COMPANY, (transmitted by T. N. Ely, chief of motive power, Philadelphia, Pa., and J. King McLanahan, Hollidaysburg, Pa.): Piece of strap rail used on the incline plane of the Portage Railroad (32811); received through R. P. Snowden, assistant engineer, Camden, N. J., 16 pieces of stone blocks and a box containing railroad spikes used in constructing railroad beds in 1831 (33467); received through J. T. Richards, engineer, maintenance of ways, Philadelphia, Pa., section of 100-pound rail with splice bar attached (33619).
- PERGANDE, THEO., Washington, D. C.: Collection of insects from Central America (33260); quartzite pebble resembling a hammer stone found on Corcoran Hill, Washington, D. C. (32759).
- PERIOLAT, C. F., Chicago, Ill.: Skin and skull of a Mount St. Elias bear, *Ursus emmonsii*. Purchase. 33159.
- PERRY, WALTER C., Bainbridge, Ga.: Specimen of *Anhinga*, in the flesh. 33290.
- PETERSON, O. A., Princeton, N. J.: Two hundred and thirty-nine rodents from Patagonia, consisting of *Cavia*, *Ctenomys*, *Notomys*, etc. Purchase. 33355.
- PHILLIPS, Mrs. EUGENIA. (See under Smithsonian Institution.)
- PHILLIPS, Dr. W. A., Evanston, Ill.: Photograph of an Indian woman engaged in spinning, and samples of fiber and cord used. 33022.
- PIETERS, A. J., Department of Agriculture: Plant. 32698.
- PILSBRY, H. A., Academy of Natural Sciences, Philadelphia, Pa.: Six specimens of unios from Lake Okeechobee, Flor-

PILSBRY, H. A.—Continued.

ida (gift) (32645), mounted jaw and radula of *Binneya notabilis* from Guadalupe Islands, California (exchange) (33489).

PINE, GEORGE, Aripeka, Fla.: Marine shells from Florida. 32370.

PIPER, C. V., Pullman, Wash.: Plants. 33196. (See under Agriculture, Department of.)

PIRSSON, L. V. (See under Interior Department, U. S. Geological Survey.)

PITTIER, H. (See under Costa Rica, Instituto Fisico-Geografico.)

PIWONKA, THOMAS, Cleveland, Ohio, (transmitted by G. H. Girty): Twenty-four invertebrate specimens from the Bedford shale, Cleveland, Ohio, and 3 invertebrates from the Cleveland shale, Bedford, Ohio; also a specimen of travertine containing leaf impressions. 32769.

PLEAS, C. E., Oolagah, Ind. T.: Unios, representing 6 species (gift) (32617); living unios (exchange) (32808).

PLITT, CHARLES E., Baltimore, Md.: Two plants. 33728.

POLLARD, C. L., U. S. National Museum: Plants (32413); specimen of *Viola sagittata* (32566); 300 plants obtained principally in Pennsylvania and New Jersey (32755); 6,800 plants (purchase) (32896); 2 plants (33173); specimen of *Antennaria nodioica*, obtained in Laurel, Md. (33537).

POLLOCK, W. M., Morgantown, W. Va.: One hundred and seventy-two specimens of dried plants collected in West Virginia. Exchange. 33207.

POPE, CHARLES A., Trenton, N. J., received through Bureau of Ethnology: Eight specimens of earthenware from Colombia. 33239.

POPE, RALPH W., New York City: Three snapper sounders. 32772. (See under American Institute of Electrical Engineers.)

POPENOE, Prof. E. A., Topeka, Kans.: One hundred and thirty-nine specimens of coleoptera from Kansas. 33259.

POTTER, A. F., Holbrook, Ariz. (transmitted by Dr. J. Walter Fewkes): Stone cup. 32789.

PRATT, F. C., Department of Agriculture: Eighty-one insects (32845); *Crambidia* sp., and specimen of *Crocata nigricans*

PRATT, F. C.—Continued.

(33005); 17 imagoes, 6 larvae, and 3 pupae of *Clydonopteron tecoma* (33565).

PRATT, Prof. HENRY S., Haverford, Pa.: Parasites. 32343.

PRENTISS, D. W., jr. U. S. National Museum: Reptiles, mammal skins and skulls, birds' skins, fishes, invertebrates (32542); curved knife, used for hollowing out canoes, obtained from the Yakutat Indians (gift) (33385).

PRICE, R. H., College Station, Tex., received through Department of Agriculture: Sixty-nine specimens of dried plants. Exchange. 33594.

PRIDE, H. A., Holland Patent, N. Y.: Specimen of woodcock, *Philohela minor* (mounted). 33379.

PRINGLE, C. G., Charlotte, Vt.: Five hundred Mexican plants (purchase) (32999); plant (gift) (33249).

PURPUS, C. A., Daunt, Cal.: Five hundred and forty plants. Purchase. 33635.

QUAKER CITY FRUIT COMPANY, Philadelphia, Pa. (transmitted by F. M. Pennock, Baltimore, Md.): Five specimens of Agave from Jamaica. 33578.

RADDERS, V. C., Marion, N. Y.: Eight insects. 32586.

RALPH, Dr. W. L., Utica, N. Y.: Three birds' skins (gift) (32650); 37 birds' eggs from islands off the coast of Lower California (33055); (presented to the Smithsonian Institution and deposited in the National Museum); 2 birds' skins and two mounted birds (gift) (33242); 26 eggs and 4 nests, representing 5 species, from Texas (gift) (33333); 21 birds' eggs and 5 birds' nests from Florida (gift) (33390). (See also under A. W. Anthony.)

RAMBO, M. ELMER, Philadelphia, Pa.: Three birds' skins. 32373.

RANKIN, WALTER N., Princeton University, Princeton, N. J.: Two specimens of Fiddler crab, *Uca leptodactylus*, from the Bahamas. 33343.

RATHBUN, Miss M. J., U. S. National Museum: Insects, mollusks, and marine invertebrates from West Goldsboro, Me. 32589.

REBER, Judge THOMAS, Natchez, Miss.: Currency note for \$2.50, issued at Jackson, Miss., May 1, 1862. 32924.

REDDING, R. J., director Georgia Agricultural Experiment Station, Experi-

REDDING, R. J.—Continued.

ment, Ga.: Isopod crustaceans from a well at Metcalf, Ga.; collected by W. A. Monroe. 33052.

REID, Dr. S. L., Routt, Ky.: Ten specimens of *Odontota dorsalis* Thunb. and specimen of *Dynastes tityus* Linn. 32497.

REYNOLDS, A. J., Connersville, Ind.: Archæological objects. 33087.

REYNOLDS, Dr. E. K., Washington, D. C.: Sixty-five plants. 33636.

RHEES, W. J. (See under Meek, F. B., estate of.)

RICE, Miss S. T., Worthington, Mass.: Three specimens of gentian. 32614.

RICHARDS, J. T. (See under Pennsylvania Railroad Company.)

RICHARDSON, James E., Ipswich, Mass.: Bead of citrine quartz. 33059.

RICHMOND, C. W., U. S. National Museum: Insects, marine invertebrates, birds' skins, plants, shells, mammal, bird skeleton. 32651.

RIDENOUR, WILLIAM B., Scranton, Pa.: Pupa of Sphinx-moth. 32337.

RIDGWAY, ROBERT, Myers, Fla.: Specimens of *Cariacus osceola*, and of *Sciurus* sp.; 82 birds' skins from southern Florida (33300); 83 birds' skins, reptiles and batrachians, fishes, marine invertebrates, from Florida (33359); marine shells, representing three species, from Florida (33436); specimens of Song Sparrow, in the flesh (33665); crocodile eggs from Florida (33709).

RIDGWAY, Dr. TH. EDWARD, Washington, D. C.: Natural formation (concretion) with two cavities, found near Shrewsbury, N. J. (32401); "claymore," from the battlefield of Bannockburn, used as a stage sword by J. Wilkes Booth (32405). Deposit.

RIES, HEINRICH, New York City: Clays and kaolins from Germany, Saxony, and other countries. 33289.

RILEY, J. H., Falls Church, Va.: Three specimens of *Butco latissimus* and *Geothlypis formosa*, from Virginia (33104); 29 birds' eggs (8 sets) from Virginia (33346).

ROBESON, Mrs. M. I., Trenton, N. J.: Malay kris, and a short sword from Gilbert Island made of sharks' teeth secured to a cocoa-wood handle; robe

ROBESON, Mrs. M. I.—Continued.

made from the skin of a Polar bear. 33186.

ROBINSON, Dr. B. L., Botanic Gardens, Cambridge, Mass.: Four hundred and forty-six plants from northwestern Mexico, collected by Dr. Lumholtz in 1890 and 1892 (purchase) (32913); 1,700 specimens of plants belonging to the John Ball collection; miscellaneous collection of plants from the Gray Herbarium (gift) (32922); 1,711 specimens of the John Ball collection of insects (purchase) (32937).

ROCKHILL, Hon. W. W., U. S. minister, Athens, Greece: One hundred and nine stereoscopic slides illustrating his journey through Tibet (32439); crossbow for tiger killing, from Amoy, China (32669); photograph of a cart used in Sicily (32748).

ROE, FRANCIS A., Rear-Admiral, U. S. Navy: Sword from Congo River, Africa, obtained by Lieutenant Taunt. 32739.

ROPER, E. W., San Pedro, Cal.: Marine shells, representing 15 species, from California (33426, 33685).

ROSE, J. N., U. S. National Museum: Herbarium specimens collected in Mexico (32303); 40 specimens of insects from Mexico (33070); 45 plants (33197); marine shells, representing 4 species, from Guaymas, Mexico (33222); 6,000 plants collected in Mexico in 1897 (33695); 32 specimens of plants (33324); land shells from Mexico, representing 3 species (33642). (See also under Agriculture, Department of.)

ROSTAN, Dr. A., Piemont, Germany: One hundred and fifty-seven plants. Purchase. 32621.

ROTHROCK, Dr. THOMAS, Howard, Pa.: Stone implement, and teeth of a horse. 32599.

ROWLEE, Dr. W. W., Cornell University, Ithaca, N. Y., transmitted by Department of Agriculture: Fifty-three specimens of dried plants collected in Greenland. Exchange. 33233.

ROYAL ARCH MASONS, GRAND CHAPTER, STATE OF NEW YORK, transmitted by J. W. Palmer, Secretary: Bronze medal, commemorative of the centennial of the G. C. R. A. M. of the State of New York. 33234.

- RUDISILL, J. F., Arkadelphia, Ala.: Specimens of Albino worm-snake, *Celuta amana*, from Alabama. 33531.
- RUGGLES, BYRON P., Hartland, Vt.: *Phytonomus* sp. 32779.
- RUSCHERVEYH, G., Buenos Ayres, Argentina: Sixty-six specimens of lepidoptera. Exchange. 32886.
- RUSH, DR. WILLIAM H., U. S. Navy., League Island Navy-Yard, Philadelphia, Pa.: Marine shells from Maldonado Bay, Uruguay, representing 6 species. Exchange. 32945.
- RUSSELL, I. C., U. S. Geological Survey: Fossil bones. 32436.
- RYAN, W. J., Garden, Okla.: Larva of *Argus labrusca* Linn. 32532.
- RYDBERG, P. A., Brooklyn, N. Y.: Thirty plants collected in Montana. 33116.
- SAFFORD, Prof. JAMES M., State Geologist, Vanderbilt University, Nashville, Tenn.: Phosphate rocks, ores, etc., from Tennessee. 32953.
- ST. PETERSBURG, RUSSIA, Muzei Imper. Akademii Nauk: Land shells from Transcaspia and the Caucasus; marine shells from the Murman coast of Russia. Exchange. 33639.
- SALMON, DR. D. E., chief, Bureau of Animal Industry, Department of Agriculture: Parasites. Deposit. 32345.
- SALONA, MANUEL, San Mateo, Fla.: Birds from Florida. Collected at the instance of Dr. William L. Ralph. 33654.
- SANFORD, E. L., Watertown, Conn.: Humming bird (*Trochilus colubris*), in the flesh. 32383.
- SANFORD, J. A., Stockton, Cal.: Six plants. 33700.
- SARGENT, DR. C. S., Jamaica Plains, Mass. (transmitted by Department of Agriculture): Eight specimens of dried plants. Exchange. 33238.
- SARGENT, H. E. (See under Detroit Museum of Art.)
- SAUNDERS, Miss BELLE, Department of Agriculture: Herbarium specimen. 32699.
- SCHALLE, GUSTAVE, Sweet Springs, Mo.: Mastodon tooth and parts of two other fossil teeth. Returned. 32952.
- SCHIEB, Rev. HENRY. (See under Smithsonian Institution.)
- SCHMID, EDWARD S., Washington, D. C.: Black Swan (32906); 2 specimens of Black Swan, *Chenopsis atrata*, in the flesh (32969). Exchange.
- SCHÖNLAND, Dr. S. (See under Grahamstown, South Africa: Albany Museum.)
- SCHOOLCRAFT, Mrs. LUKE, Washington, D. C.: Glazed lithograph (framed) illustrating war scenes; Confederate money. 33264.
- SCHUCHERT, CHARLES, U. S. National Museum, and DAVID, WHITE, U. S. Geological Survey: Paleozoic invertebrates from the vicinity of Nashville, Tenn. (32419); shells and fossils from Greenland and Baffin Land (32658); 2 specimens of *Benthosema mülleri* and *Asternopterix gunelliformis*, a very rare and interesting fish, from Omenak-Fiord, Greenland; Eskimo dog skull, porpoise skull, and skull of a Polar bear; Inuit skull and 5 fetal pinnepedia: collection of plants from New Campbelltown, Cape Breton, Baffin Land, and the following localities in Greenland: Omenak, Pagtorfik, Atane. Atanekerdluk, Sarfatic, and Godhaven; 26 specimens of insects from Signuia, near Cape Haven, Baffin Land, bryozoa from Greenland (32686); piece of native iron from Karsak and 9 specimens of other minerals; 228 Inuit stone implements from Sarkak, Greenland; 3 Inuit stone implements from Greenland, and 20 Inuit stone chips from the same locality; 84 rock specimens from Greenland, Baffin Land, and Cape Breton; native fishhook from Godhaven, Greenland, and a nativesummer costume consisting of four pieces (32709); meteorite from Iowa (33732).
- SCHUMANN, Dr. K., Berlin, Germany: Three hundred and seventy-three specimens of Austro-African plants. 33441.
- SCHWARZ, E. A., Department of Agriculture: Collection of coleoptera of North America, representing about 12,000 species, and constituting the private collection of Messrs. Schwarz and Hubbard. 33101. (See under Henry G. Hubbard.)
- SCIDMORE, Miss E. R., Washington, D. C.: Collection of rubbings of reliefs on the chapel of the Wa Family (147 A. D.), of Shantung, China (gift) (33036); set of Japanese ceremonial knots, 17 plates, and 2 Japanese books (deposit) (33456);

- SCIDMORE, Miss E. R.—Continued.
lac bracelets from Jeypore, India (gift) (33473); Chinese and Japanese pottery and bronzes (gift) (33558). (See under George Harries.)
- SCIENCE COLLEGE, Imperial University. (See under Tokyo, Japan.)
- SCOTT, Prof. W. B., Princeton University, Princeton, N. J.: Skeleton of condor eagle (32378); 43 birds' skins from Patagonia (32774). Purchase.
- SCUDDER, Prof. S. H., Cambridge, Mass.: Twenty-one specimens of Acridiidae, representing 13 species (new to the Museum collection) (32534); 10 specimens of diptera, illustrating cotypes of Williston's (33006); 151 specimens of hymenopterous parasites including some types and cotypes of Dr. A. S. Packard and Dr. L. O. Howard (33071).
- SEAL, WILLIAM P., Delair, N. J.: Two specimens of *Chologaster cornutus* and 2 specimens of *Elassoma zonata*. 33107.
- SEATON-KARR, H. W., Wimbledon, England: Collection of rude chipped implements of flint and quartzite (Somaliland paleoliths). Purchase. 32485.
- SEATTLE FISH COMPANY. (See under J. O. Cates.)
- SHARP, Mrs. J. D. (See under New York Colonization Society.)
- SHAW, ALFRED V., Newton Highlands, Mass.: Seven specimens of Baffin Land fossils from the Ordovician (Trenton) formation. 33002.
- SHAW, Lieut. C. P., U. S. Navy, Alberene, Va.: Specimen of *Diadophis punctatus*. 32622.
- SHAW, G. W., Corvallis, Oreg.: Specimen of tripolite. 33532.
- SHELDON, Prof. C. S., Oswego, N. Y.: Three beetles (32578); 25 specimens of diptera (33517); (see under Agriculture, Department of).
- SHEPARD, Dr. C. U., Charleston, S. C.: Indian money from South Carolina. 33109.
- SHEPHERD, CLYDE, Oklahoma City, Okla.: Two living specimens of *Unio tuberculatus*. 32798.
- SHERMAN, CHARLES E., Concepcion, Chile: Fourteen photographs of Pueblo Indian scenes. 33317.
- SHIRLEY, HARRISON F., Enterprise, Idaho: Rear bone of gill of fish found in sedimentary sandstone. 33456.
- SHOCK, W. H., commander, U. S. Navy, Washington, D. C.: Operculum and lingual ribbon of a specimen of *Fulgur carica*. 33241.
- SHRIVER, HOWARD, Cumberland, Md.: Land shells, representing two species. 32715.
- SHUFELDT, Dr. R. W., Takoma Park, D. C.: Eight specimens, representing a new species of *Holospira*, from Rio Grande Mountains, Brewster County, Tex. (32392); specimen of *Conorhinus rubrofasciatus* De Geer (32425); 2 photographs of a stone ornament or charm, found near Stonington, Conn. (32500); Cliff mouse, *Peromyscus truei*, from Fort Wingate, N. Mex. (32550); crustaceans, insects, and shells from Fort Wingate, N. Mex. (32625); specimen of *Lamproptelis rhombomaculatus* from the District of Columbia (32636); 4 photographs of birds and 3 photographs of mammals (32751). (See also under J. M. Hamilton.)
- SHUFELDT, Dr. R. W., and PERCY SHUFELDT, Takoma Park, D. C.: Water snake (*Tropidonotus sipedon*). 32452.
- SIMMER, HANS. (See under Carinthia, Austria: Die Freie Vereinigung Tiroler Botaniker, Dellach Oberdrauthale.)
- SIMPSON, J. H., Manatee, Fla.: One hundred and thirty-five plants collected on the Keys of Florida (exchange) (33505); 61 plants from Florida (exchange) (33560); 99 plants (gift) (33735).
- SIMPSON, R. L., Eufaula, Ind. T.: Specimen of *Corydalus cornutus* Linn. 32314.
- SLOSSON, Mrs. ANNIE T., Franconia, N. H.: Ten specimens of diptera (32311); 16 specimens of diptera and 9 specimens of hymenoptera (32423); 9 specimens of hymenoptera (32848); moth, *Hypopta anna* Dyar (type specimen) (33599).
- SMALL, J. K., Columbia University, New York: One thousand five hundred plants from the eastern section of the United States (exchange) (32556); specimen of *Cassia mississippiensis* (gift) (33045).
- SMITH, CHARLES L., Wayne, Iowa: Five hundred and eighty-four specimens of dried plants from Mexico and Central America. Purchase. 32805.
- SMITH, HARLAN I., American Museum of Natural History, New York City: Crustaceans from British Columbia. 33334.

SMITH, HERBERT H. (See under Carnegie Museum.)

SMITH, Dr. H. M., U. S. Fish Commission: Small collection of dried plants collected at Lake Tahoe in 1896 (33037); snake from Monroe County, N. Y. (33178); 2 skull bones and a dermal plate of an Alligator Gar, *Lepidosteus tristachus* (33229). (See also under Fish Commission, U. S.)

SMITH, Prof. J. B., New Brunswick, N. J.: Type specimen of *Acronycta manitoba* Smith (32943); 7 specimens of *Lampronota occidentalis* Cr. (33312); 14 Cuban and Mexican plants (32877).

SMITH, JARED G., Washington, D. C.: One-hundred and forty-two outline sketches of the achenia of *Sagittaria* (33120); 255 specimens of plants collected by G. Jermy in Mexico, Texas, and Hungary (33279); galena (sulphide of lead) (32484).

SMITH & WESSON, Springfield, Mass.: Thirty-eight caliber hammerless safety revolver and a solid frame hand-ejecting revolver. "O." 33409.

SMITH, WILLIAM R., superintendent, Botanic Garden, Washington, D. C.: Six specimens of *Yucca*. 32694.

SMITHE, J. CURTISS, Washington, D. C.: Tomahawk found on the grounds surrounding the monument erected in memory of Father Rale and the Norridgewock tribe, who were killed by the English in 1616. 33209.

SMYTH, C. H., jr., Clinton, N. Y.: Weathered and unweathered alnoite. 33501.

SMITHSONIAN INSTITUTION, Mr. S. P. Langley, Secretary:

Ten pieces of electrical apparatus. Deposit. 32407.

Engraving of Lewis H. Morgan. Gift. 32753.

Collection of photographs taken by the Hayden and other surveys, and a portfolio containing specimens of Algae. Received through Miss Lucy H. Baird. 32842.

Collection of ethnological and archaeological objects from the District of Columbia. Received through Mrs. Eugenia Phillips and Mr. Thomas Lee. 32872.

SMITHSONIAN INSTITUTION—Continued.

Collection of ethnological and archaeological objects from the South Sea Islands. Received through Mrs. Eugenia Phillips and Mr. Thomas Lee. Lent. 32873.

Morse telegraph register. Presented to the Smithsonian Institution by Rev. Henry Scheib; transmitted by Mr. Richard Ortmann, and deposited in the National Museum. 32976.

Transmitted from the Bureau of Ethnology, Maj. J. W. Powell, Director.

Collection of ancient pottery and other ethnological objects from Arizona, made by Dr. J. Walter Fewkes (32431); mescal bread obtained from the Mescalera Apache Indians of New Mexico (32592); 3 shields and other paraphernalia belonging to a Kiowa Indian camp (32642); insects, marine invertebrates, birds' skins, plants, snake, mollusks, vertebrate bones, 2 specimens of *Phoca* from Greenland, and 5 pairs and pieces of caribou antlers, Eskimo skulls and other bones from Eskimo graves, Eskimo lamps, a pair of Eskimo woman's boots, and a model of an Eskimo igloo, from Greenland, collected by Robert Stein (32683); human skulls (32754); collection of ethnological objects from Patagonia and Terra del Fuego, made by J. B. Hatcher in 1896 and 1897 (32817); collection of stone implements, etc., from an old village site in Wichita, on North Fork of the Red River, Kiowa and Comanche Reservation, Okla. (32847) (collected by James Money); 22 boxes containing collections of Dr. J. Walter Fewkes in Arizona during the summer of 1897, comprising ancient pottery, etc. (32857); stone implements collected by William Huber, Hamilton, Ohio (32912); archaeological objects obtained from stone graves on the Ohio River near Maysville, Ky. (33411) (collected by Gerard Fowke); "medicine stone" or fetish of the "Dog Society" of the Indians, transmitted by L. L. Mecker, Darlington, Okla., and transferred to the National Museum (33419); pair of sandals obtained from the Pima Indians, from Salt

SMITHSONIAN INSTITUTION—Continued.

Transmitted from the Bureau of Ethnology—Continued.

River Valley, Arizona (33579). (See under A. L. Bolton, J. H. Bratley, James Crockett, Henry S. Gane, W. A. Kelker, John McCardell, B. Ogborn, C. A. Pope, A. F. Spiegelberg, V. W. Taylor, H. G. Webb.)

Transmitted from the National Zoological Park; Dr. Frank Baker, superintendent:

Marmoset, mink, seal, five young panthers, and a lynx (32330); snake (*Ophiosaurus ventralis*), from New Smyrna, Fla. (32355); Blue Jay, *Cyanocitta stelleri annexeris* (32446); 2 specimens of *Monachus tropicalis*, *Auchenia llama*, *Felis pardus*, *Putorius vison*, and *Zalophus californianus* (32473); specimens of *Cervus canadensis*, *Cariacus virginianus*, and *Putorius vison* (32590); *Putorius vison* from Virginia, and *Cynocephalus anubis* from New York (32609); Clarke's Nutcracker, in the flesh (32674); *Farancia abacura*, from Virginia (32714); osprey, in the flesh (32727); snake (*Rhinochilus lecontei*), from Texas (32824); lizard (*Basiliscus vittatus*), from Honduras (32825); Puma, *Felis concolor*, and California Sea Lion, *Zalophus californicus* (32846); specimen of *Crotalus confluentus*, from Kansas (32892); *Coluber obsoletus*, from Maryland (32893); *Ophidolus doliatus*, from the District of Columbia (32894); kangaroo (*Macropus giganteus*), in the flesh (32946); jay (*Perisoreus*), in the flesh (32962); *Mitua tuberosa*, in the flesh (32965); *Crotalus confluentus* from Kansas (33072); Virginia deer, *Cariacus virginianus*, elk (*Cervus canadensis*) (33075); *Crotalus adamanteus*, from Florida (33073); anubis baboon, *Cynocephalus anubis*, hamadryas, *Cynocephalus hamadryas*, peccary, *Dicotyles tajacu*, lynx, *Lynx rufus maculatus* (33106); Mule Deer, *Cariacus macrotis*, Spider Monkey (*Ateles*) (33177); brant, White Ibis, Canada goose, Toulouse goose, diamond rattlesnake (33206); crocodile (*Crocodilus americanus*), from Honduras (33225); hamadryas, *Cynocephalus hamadryas*, lynx, *Lynx rufus macu-*

SMITHSONIAN INSTITUTION—Continued.

Transmitted from the National Zoological Park—Continued.

latus, puma, *Felis concolor* (33258); *Antilocapra americana* and *Fulpes velox* (33427); *Alligator mississippiensis* (33471); lynx, *Lynx rufus*, peccary, *Dicotyles tajacu*, Black Bear, *Ursus americanus* (33548); Pronghorn Antelope, *Antilocapra americana*, Kit Fox, *Fulpes velox* (33559); *Drymarchon corais couperi*, from Florida (33562); *Cebus hypoleucus* (33667); parrot (35702); skeletons of Golden Eagle, Wood Ibis, Red-tailed Hawk, and three magpies (33708).

SNOWDEN, R. P. (See under Pennsylvania Railroad Co.)

SNYDER, D. T., Washington, D. C.: Sheet of tickets issued by the Potomac and Shenandoah Navigation Lottery, No. 2, in 1812. 32856.

SNYDER, DR. ELIZABETH, Philadelphia, Pa.: Four photographs of Moki and Yava Supai Indians. 33151.

SNYDER, DR. F. D., Ashtabula, Ohio: Parts of two human skeletons; implement; notched sinker, 6 water-worn pebbles, plaster cast of polished stone hatchet; also map showing the location of the mound in which it was found. 33692.

SOCIEDAD GEOGRAFICA. (See under Lima, Peru.)

SÖRENSEN, P. H., Jakobshavn, Greenland: Ethnological objects; birds, mammals, fishes, Holothurians; and crustaceans; from Jakobshavn, Greenland. Exchange. 33134.

SORIN, THOMAS R., Bisbee, Ariz.: Two specimens of polished stalagmites, from Copper Queen mine, Arizona. 32421.

SOUTHWICK, W. C., Raritan, N. J.: Specimen of Swainson's Thrush. 32347.

SPAINHOUR, DR. J. M., Lenoir, N. C.: Specimen of *Monohammus confusor* Kirby. 32804.

SPENCE, R. S., Paris, Idaho, transmitted through U. S. Geological Survey: Three specimens of Triassic Ammonites (*Meekeoceras*) from Idaho. 32365.

SPEELMAN, M. R., Washington, D. C.: Bat, in the flesh, from the District of Columbia. 33342.

SPERLING, ESTELLA, Washington, D. C.: Abnormal hen's egg. 33620.

- SPIEGELBERG, A. F., Santa Fe, N. Mex., transmitted by Bureau of Ethnology: Rude stone image (deposit) (32585); 2 stone images from an ancient pueblo in New Mexico (gift) (32766).
- SPINDLE, H. H., Shenandoah, Va.: Specimens of *Harrisina americana* Boisduval. 32725.
- SPRATT, M. B., New York City: Specimen of *Phobetron pithecium*, Abbott & Smith, 32551.
- SQUYER, HOMER, Wibaux, Mont.: Fresh-water shells, representing three species (33410); 23 specimens of Upper Cretaceous invertebrate fossils, representing 8 species, from Montana (33461): land and fresh-water shells from Montana (33497); living unios. Purchase. 32870.
- STANTON, T. W. (See under James M. Hamilton.)
- STANTON, REV. W. A., St. John's College, Belize, British Honduras: Shells, corals, Echini, and other marine invertebrates from St. Georges Cay, near Belize (32631); 3 specimens of sea-urchin, coral, and marine shells (33060); corals and barnacles (33237); crustaceans from Belize and vicinity (33442); 17 corals and 2 sea-urchins from Spanish Cay, near Belize (33474).
- STEARNS, ELMER, Salt Lake City, Utah: Seeds of *Dasylyrion* sp. 32424.
- STEARNS, DR. R. E. C., Los Angeles, Cal.: Specimen of *Tivela crassatelloides* from California. 32461.
- STEDMAN, Prof. J. M., transmitted through Dr. L. O. Howard, Columbia, Mo.: Type specimen of *Nothris maligemella* Murtfeldt. 33116.
- STEELE, E. S., Washington, D. C.: Specimen of *Onoclea struthiopteris* (32327): specimen of *Gyrostachys simplex*. (32513); 8 plants from in and near Washington, D. C. (32880).
- STEIN, ROBERT. (See under Smithsonian Institution, Bureau of Ethnology.)
- STEINER, DR. ROLAND, Grovetown, Ga.: Collection of stone implements and archaeological objects from an aboriginal village site, Kiokee Creek, Columbia County, Ga. (32334) (32670); archaeological objects from shell-heap on the Savannah River at the mouth of Kiokee Creek (32800); 7 boxes containing archaeological objects from an aboriginal quarry and village site near Burts
- STEINER, DR. ROLAND—Continued.
Mountain, Columbia County, Ga. (32871); stone relics from Columbia County, Ga. Deposit. (32930).
- STERTZ, ADAM, Baltimore, Md.: Fourteen plants collected in Maryland. 32361.
- STEJNEGER, DR. L., U. S. National Museum: Natural history material from Japan and Kamchatka (33024); 2 bear skulls from Yezo Island, Japan, obtained by Prof. S. Nozawa, at Sapporo, Yezo (33114); natural history material from Commander Islands (33192); snapping turtle from Maryland (33512).
- STERKI, DR. V., New Philadelphia, Ohio: Living unios, representing 4 species, from Marietta, Ohio. 32649.
- STEVENS, M. A., Newark, N. J.: Badge of the Woman's Relief Corps (auxiliary to the Grand Army of the Republic). 32929.
- STEVENS, S. GEORGE, Lincoln, N. Y.: Specimens of Pemphigids. 32575.
- STEVENSON, MRS. CORNELIUS, Philadelphia, Pa.: Four photographs of ancient arbalists. 33287.
- STEWART, MRS. JUNO, Washington, D. C.: Portraits on wood of President and Mrs. Madison, and a photograph of their home at Montpelier. 32487.
- STEWART, DR. R. E., Goldendale, Wash.: Photograph of an arrowhead and bone holders. 32646.
- STEWART, DR. T. B., Lockhaven, Pa.: Broken gunstoeck with the name "L. Wetzel" cut on one side, found in a creek at Waynesboro. 33591.
- STILES, CHARLES WARDELL, Department of Agriculture: Parasites (32339, 32340). Deposit.
- STILLWELL, L. W., Deadwood, S. Dak.: Two specimens of *Placentiacras* and one specimen of *Prionoocyclus*. Purchase. "O." 33425.
- STONE, GEN. ROY, Department of Agriculture: Twenty geological specimens and 12 fossils from phosphate beds. 32740.
- STORMS, Prof. J. W., Ashland, Oreg.: Three specimens of fossiliferous sandstone from the Chico formation, south side of Bear Creek, Ashland, Oreg. 32366.
- STRAUB, Professor and Mrs. CARL, Port Orange, Fla.: One hundred and sixty-one specimens of cryptogamic plants

- STRAUB, Professor and Mrs. CARL—
Continued.
belonging to the late Prof. F. C. Straub (32784); 3 boxes containing 1,403 plants collected by the late Prof. F. C. Straub (33446). (See under Prof. O. F. Cook.)
- STRICKER, J., Philadelphia, Pa.: Shuttle belonging to an ancient loom. 33475.
- STRODE, Dr. W. S., Lewiston Ill.: Seven specimens representing 2 species of unios from Georgia (32430); 2 living unios from Illinois (32462); living Unionidae (32463); living Unionidae representing 6 species from the Illinois River (32478); 3 unio shells containing animals (32951).
- SUBLETT, FRANK L., Staunton, Va.: Crab-spider, *Acosoma gracile* Walck. 32390.
- SULZBERGER, DAVID, Philadelphia, Pa.: Jewish burial prayers (parchment manuscript on board). 33602.
- SUMWALT, C. H., New York City: Specimen of *Pelidnota sumptuosa* Vigers. 32530.
- SURBER, THADDEUS, White Sulphur Springs, W. Va.: Twelve mammals (gift) (32735); 2 skins of Fox Squirrel, *Sciurus ludovicianus vicinus* (exchange) (32844).
- SWINGLE, Prof. W. T. (See under Agriculture, Department of.)
- TABER, Miss MARY A., Mabel, Minn.: Leaf-cutting Bee, *Megachile frigida* Smith. 32455.
- TAFT, R. E., Leadville, Colo.: Upper portion of a femur of *Procamelus*. 33412.
- TAUNT, Lieutenant. (See under Rear-Admiral Francis A. Roe.)
- TAYLOR, V. W., West Winsted, Conn. (transmitted through Bureau of Ethnology): Stone implements from Farmington River valley. 32860.
- TAYLOR, WILLIAM TATE, Hancock, Mont.: Specimen of molybdenite from Madison County, Mont. 32375.
- TELEGRAPHIC HISTORICAL SOCIETY OF NORTH AMERICA (transmitted by Mr. George C. Maynard, Washington, D. C.): Morse telegraph register made in 1860, and used on the Elmira division of the Northern Central Railway from 1862 to 1868. Deposit. 33262.
- TELLER, Dr. E. (See under Agriculture, Department of.)
- THAYER, A. H., Dublin, N. H.: Specimen of Brewster's Warbler, *Helminthophila leucobronchialis* (32663); snake (*Storeria dekayi*) (32673).
- THOMPSON, J. F., Anacostia, D. C.: Hand grenade found on a battlefield near Bladensburg. 33179.
- THOMPSON, J. F., Anacostia, D. C.: Powderhorn, probably of Revolutionary era; sword found at Fort Greble, D. C., during the civil war, 1861-1865; bridle, bit, and lariat captured during the Mexican war by G. H. Miller, assistant architect of the Capitol. 33686.
- THOMSON ELECTRIC WELDING COMPANY, Lynn, Mass. (transmitted by Prof. Elihu Thomson): Nine specimens of electric-welded work, consisting of parts of bicycles. 33015.
- THOMSON, ELIHU. (See under Thomson Electric Welding Company.)
- THURLOW, F. W., Harvester, Tex.: Twenty-nine plants from Texas. 32902.
- TICHENOR, G. H., Washington, D. C.: Nest and four eggs of English Sparrow. 32433.
- TODD, AURELIUS, Dunedin, Fla.: Specimen of *Aglastrodon piscivorus* from Florida (32850); *Elaps fulvius* from Florida (33273).
- TOKYO, JAPAN, Science College, Imperial University (received through Dr. I. Ijima): Reptiles and batrachians from the Island of Formosa. 33448.
- TOLLIN, OSCAR, Marco, Fla.: Shells from near Cape Romano, Florida (32632, 32680).
- TONER, Dr. J. M. (deceased): Badge of the Ninth International Medical Congress, 1887. 32813.
- TOPPING, D. LEROY, Washington, D. C.: Fifty-two plants. Exchange. 32577.
- TOUMEY, Prof. J. W., Tucson, Ariz.: Specimen of *Ligusticum scopulorum*. 32703. (See also under Agriculture, Department of.)
- TOWNSEND, CHARLES H., U. S. Fish Commission: Bones obtained from an ancient shell heap at Agattu Island. 32595. (See also under Ogden, Capt. T. S.)
- TRACY, S. M., Biloxi, Miss.: Fifteen plants from Mississippi. 33218.
- TRASK, Mrs. BLANCHE, Avalon, Santa Catalina Island, Cal.: One hundred plants from California. Purchase. 32954.

- TREASURY DEPARTMENT, *U. S. Life-Saving Station*, transmitted by Capt. J. J. Duntton, keeper, Ocean City, Md.: Specimen of *Trichiurus lepturus*. 32554.
- TRELEASE, Prof. WILLIAM, Missouri Botanical Gardens, St. Louis, Mo.: Five specimens of Agaves and 9 specimens of *Dasyllirion*. 32911. (See under Agriculture, Department of.)
- TRICE, V., Prague, Bohemia: Eight alcoholic preparations of cartilagenous fishes. Purchase. 33564.
- TRUE, F. W., U. S. National Museum: Mammal skins and skulls, reptiles, birds' skins, insects, marine invertebrates, fishes, from Maine. 32542.
- TURNER, H. W. (See under J. A. Edman; Interior Department, U. S. Geological Survey, and G. W. Kimble).
- TURNER, L. M., Washington, D. C.: Danish lantern. Purchase. 33547.
- TURNER, Dr. PEYTON. (See under Agriculture, Department of.)
- TYLER, A. A., Schenectady, N. Y.: Fifty-seven plants from Staten Island seaboard. Purchase. 32687.
- ULKE, HENRY, Washington, D. C.: Specimen of *Bembidium vile* Leconte, from California (new to the collection). 32716.
- ULRICH, E. O. (See under Interior Department, U. S. Geological Survey.)
- UNDERWOOD, C. F., National Museum, San José, Costa Rica: Twenty-one birds' eggs. Exchange. 33155.
- VAN DEUSEN, Mrs. ALYS B., Hartford, Conn.: Large platter and dinner plate (32710); small plate and cream pitcher (33500); 3 dinner plates and a tea plate (32504). Deposit.
- VAN HORNE, C. P., Glen, N. Y.: Rude chipped implement (gift) (33076); fragments of pottery from prehistoric Mohawk camp sites, also 1 flint implement (exchange) (33266).
- VAN HYNING, T., Des Moines, Iowa: Fifty-five shells from various localities. 32492.
- VAN NESS, jr., JOHN, De Soto, Miss.: Thirteen specimens of Tertiary invertebrate fossils, rib of fossil ectacean, and tooth of fossil shark. 33121.
- VANDEVENTER, G. B., Huntsville, Ala.: Pentremite from Madison County, Ala. 33485.
- VASEY, Miss FLORA N., U. S. National Museum: Eighty plants from Nantucket, Mass.; (32552); 6 plants (32616); 2 plants (32692): 2 specimens of *Acer rubrum* (32781).
- VASEY, G. R. (See under Agriculture, Department of.)
- VAUGHAN, T. WAYLAND, U. S. Geological Survey: Eocene fossils from Louisiana (gift) (32374); 17 Tertiary corals from Europe and Cretaceous Rutistidae (gift) (33288); 7 Tertiary corals from Europe (purchase) (33367); land and freshwater shells from Alabama (gift) (33734).
- VIENNA, AUSTRIA: K. K. Naturhistorisches Hofmuseum, Botanische Abtheilung, transmitted by Dr. G. von Beck: One hundred plants (33272); transmitted by Dr. Theo. Fuchs; 65 specimens of Tertiary plants representing 9 species (32698). Exchange.
- VOLLAND, Mrs. LARISSA, Gettysburg, Pa.: Shell-cap from the Gettysburg battlefield. Purchase. 33675.
- WACKSMUTH, Mrs. CHARLES; Burlington, Iowa: Eight crinoids and 2 blastoids from the St. Louis formation of Alabama. 33352.
- WAGHORNE, Rev. A. C., Bay of Islands, Newfoundland: Thirty-nine specimens of dried lichens (gift) (33016); 85 Labrador lichens and a specimen of *Sphagnum* (purchase) (33193).
- WAGNER FREE INSTITUTE OF SCIENCE, Philadelphia, Pa.: Type specimen of *Pectunculus virginie* Wagner. 33478.
- WAKEHAM, Dr. WILLIAM, Department of Marine and Fisheries, Ottawa, Canada: Diatoms, marine invertebrates, fishes, and mollusks. 33479.
- WALCOTT, Hon. CHARLES D., Acting Assistant Secretary U. S. National Museum: Three pairs of antlers of *Cervus carolinensis*, from Yellowstone National Park. 33541.
- WALKER, BRYANT, Detroit, Mich.: Three unios from Alabama (32764).
- WALKER, Mrs. S. B., Castle Rock, Colo.: Teeth of fossil shark. 33302.
- WALLINGSFORD, W. W., U. S. National Museum: Gold button of the Union Veteran Corps (32938); pearl from a specimen of *Venus mercenaria*: Chesapeake Bay, Maryland (33236).

- WALPOLE, F. A., Department of Agriculture: Plant. 32569.
- WAMSLEY, F. W., Bridgeton, N. J.: Two jellyfishes and a specimen of coral. 33263.
- WAR DEPARTMENT, transmitted by Gen. R. A. Alger, Secretary of War: Medal of honor, and bow-knot issued to officers and soldiers for gallantry in military service (33431); *Army Medical Museum*, a collection of 2,205 specimens of Indian crania (33553). (See under Clarence B. Moore.)
- WARD, Prof. LESTER F., U. S. Geological Survey: Ninety-two plants from Chicago, Ill. (32561); 100 plants collected in Kansas (32697).
- WARDER, BUSHNELL & GLESSNER COMPANY, Chicago, Ill.: Four photographs of "Champion" binders. 33576.
- WARD'S NATURAL SCIENCE ESTABLISHMENT, Rochester, N. Y.: Thirteen lemurs (purchase) (32381); 5 mammal skins and skulls (purchase) (32382); 32 birds' skins (purchase) (32594); collection of sponges, corals, echini, (purchase) "N" (33235); 74 Upper Carboniferous fossils from Graham, Tex.; 12 crinoids from the Niagara of Perryville, Tennessee (exchange) (33362); ores from various localities (purchase) "O" (33370); skin of Wandering Albatross (purchase) "O" (33388); series of Beecher Brachiopod models, consisting of 20 specimens (purchase) "O" (33406); septarian nodules (purchase) (33462); photographs and negatives of a Finback Whale skull (purchase) (33690); nickel and cobalt specimens (purchase) "O" (33663); skull of porpoise (purchase) (33684); skeleton of fresh-water dolphin (gift) (33684).
- WASHINGTON, HENRY S., Locust, N. J.: Typical Italian and other volcanic rocks. 32734.
- WATANABE, KANO, Hongoku, Tokio, Japan: Two hundred and thirty-four specimens of Japanese plants. Purchase. 33657.
- WATKINS, J. E., U. S. National Museum: An etched half-tone picture of the *Monitor* and *Merrimac*, from a wash drawing by Sheppard. 32758.
- WATSON, T. L., Chatham, Va.: Fresh and decomposed diabase. 33486.
- WAYMAN, G. TURNER, Trinidad, West Indies: Cicada pupa, affected with *Entomophora*. 32318.
- WAYNE, ARTHUR T., Mount Pleasant, S. C.: Three birds' skins (exchange) (32387); 2 birds' skins (gift) (32388).
- WEBB, H. G., Castle Gate, Utah (transmitted by Bureau of Ethnology): Small piece of cordage from a cave dwelling on Minnie Maud Creek, Utah. 32967.
- WEBB, JOHN S., Disputanta, Va.: Barred owl. 33301.
- WEBBER, H. J. (See under Agriculture, Department of.)
- WEBSTER, Prof. F. M., Wooster, Ohio: Nineteen specimens of *Blissus leucopertus* Say. 32451.
- WEED, W. H. (See under Interior Department, U. S. Geological Survey.)
- WEEDEN, W. C., U. S. National Museum: Five rats. 33718.
- WENTZ, J. F., Ellsworth, Wis.: Specimen of *Sorex personatus*. 32502.
- WENZEL, F. W., Philadelphia, Pa.: Insects representing species new to the Museum collection. 32820.
- WESTERN PENNSYLVANIA HISTORICAL SOCIETY, Bellevue, Pa. (transmitted by Thomas Harper, curator): Carboniferous plants found on Peters Creek, Washington County. Exchange. 33085.
- WESTGATE, W. W., Houston, Tex.: Specimens of living Unionidæ. 32593.
- WETMORE, GEORGE H., Hilo, Hawaii: Plant. 33420.
- WETZLER, JULIUS, Holbrook, Ariz.: Toy ladle, obtained from a ruin near Holbrook. 32476.
- WHEELER, C. F., Michigan Agricultural College, Agricultural College, Michigan: Five specimens of *Tradescantia* from the grounds of the Michigan Agricultural College. Exchange. 33322.
- WHITE, A. HOLLIS, Braintree, Mass.: One hundred and sixty-two specimens of Baffin Land fossils, representing 39 species. Purchase. 33146.
- WHITE, DAVID, U. S. Geological Survey: specimen of Turnstone (*Arenaria interpres*) from Greenland (32712); woman's costume and snow knife, obtained from the Eskimos of Greenland (33587). (See also under E. G. Dyer and Charles Schuchert.)

- WHITED, KIRK, Ellensburg, Wash.: Twenty-nine plants from Washington. 32812.
- WHITING, DR. C. A., University of Utah, Salt Lake, Utah: Toad (*Bufo columbianus*) (32477); fresh-water crustaceans (33102); specimens of algae, insects, and marine invertebrates from Salt Lake City (33484).
- WICKHAM, Prof. H. F., Iowa City, Iowa: Pompiliid, *Agelia architecta* Say, and a specimen of *Trachelas tranquilla* Hentz. 32441.
- WILDER, G. D., Pekin, China: Twenty-three skins of Chinese birds, received in exchange. (33017, 33230, 33741.)
- WILLIAMS, F. H., Greene, N. Y.: Two hundred and ninety paleozoic fossils, representing 101 species. 33103.
- WILLIAMS, DR. F. H., Bristol, Conn.: Four photographs of rock bowlders with curious markings. 33138.
- WILLIAMS, ISAAC, Meadville, Pa.: Geometrid moth, *Hematopsis grataria* Fabr. 32544.
- WILLIAMS, R. S., Columbia Falls, Mont. (received through Department of Agriculture): Twelve plants collected in Montana in 1897. 32901.
- WILLIAMSON, E. B., and OGBURN, R. C., Columbus, Ohio: Two specimens of a supposed new Darter, *Etheostoma sciotoense*, from Big Walnut Creek, Scioto River, near Columbus, Ohio. 33135.
- WILLIAMSON, Mrs. M. BURTON, Los Angeles, Cal.: Specimens of *Modiola capax* Couv., from San Pedro and Redondo, Cal. 32793.
- WILLISTON, Prof. I. W. (See under Kansas, State University of.)
- WILSON, G. W. (See under Florida Times-Union and Citizen.)
- WINCHESTER REPEATING ARMS COMPANY, New Haven, Conn.: Three modern rifles. 33491.
- WINSLOW, Lieut. HERBERT, U. S. Navy, Boston, Mass.: United States flag used on board the U. S. S. *Kearsarge* at the time of the surrender of the Confederate steamer *Alabama* 33686.
- WINTON, Rev. GEORGE B., San Luis Potosi, Mexico: Twelve photographs of scenery near Lake Patzenaro, Mexico. 33519.
- WOLTZ, GEORGE W., U. S. National Museum: Sharp's carbine, issued by the United States Government to Baker's Cavalry and used throughout the war of the rebellion (deposit) (32832); specimens of *Mus decumanus* from Washington, D. C. (33586, 33622); 3 specimens of *Mus decumanus* (33664).
- WOLVERTON, N. (See also under Agriculture, Department of.)
- WOOD, C. F., Marion, N. Y.: Parasites (*Pelecinus polyturator* Drury, and *Thallessa lunator* Linn.). 32514.
- WOOD, J. MEDLEY, Natal Botanic Gardens, Sereia, Durban, Natal, Africa (received through Department of Agriculture): One hundred and seventy-five plants. Exchange. 33648.
- WOODDELL, G. P., Seven Oaks, Fla.: Sea-urchin, fragment of *Pterogorgia acerosa* Ehrenbers, and 2 marine shells. 32474.
- WOOLMAN, LOUIS, Philadelphia, Pa.: Tertiary fossils from the Dismal Swamp. 33080.
- WOOSTER, A. F., Norfolk, Conn.: English half-penny: George III. 33720.
- WORCESTER, Prof. D. C., Ann Arbor, Mich.: A large collection of birds' skins and birds' eggs and nests from the Philippine Islands. 32543.
- WORTHEN, C. K., Warsaw, Ill.: Skin and skull of mink. 33608.
- WRIGHT, B. H., Penn Yan, N. Y.: Unios from Eastern and Southern parts of the United States (32367, 33397, 32450, 32504, 32619, 32914, 32935, 32998, 33026, 33133, 33175).
- WRIGHT, W. G., San Bernardino, Cal.: Lizard, *Sceloporus magister*. 32835.
- WRIGHTSEN, Miss ANNIE, Albany, N. Y.: Fifteen pieces of electrical apparatus. Purchase. 33204.
- WYNKOOP, A. G., Charlestown, W. Va.: Caterpillar of Sphinx moth, *Thyreus abbottii* Swains. 32442.
- YAN FOO LEE, New York City (transmitted by Mr. W. V. Cox): Three agricultural implements. 33033.
- YOUNG, Dr. G. B., U. S. Marine-Hospital Service, Delaware Breakwater Quarantine Station: Snake.

- ZABRISKIE, Rev. J. L., Flatbush, Long Island (transmitted through Department of Agriculture): Forty-five specimens of coleoptera, hemiptera, and hymenoptera (33211); 24 specimens of hymenoptera (33331).
- ZEILLER, RENE, Paris, France: Two specimens of *Neuropteris scheuchzeri* Hoffm.
- ZEILLER, RENE—Continued.
from Serkis-Bey, near Amasra, Asia Minor, and 3 specimens of *Neuropteris scheebani* Stur. from northern France. 32840.
- ZUCK, F. A., Holbrook, Ariz.: Silicified wood from Arizona and Montana. Purchase. "O." 33662.

APPENDIX III.

STATEMENT OF THE DISTRIBUTION OF SPECIMENS DURING THE YEAR ENDING JUNE 30, 1898.

AFRICA.

Albany Museum, Grahamstown, South Africa: Bird skins (84 specimens). Exchange. (D. 11237.)

AMERICA.

NORTH AMERICA.

CANADA.

New Brunswick.

Natural History Society of New Brunswick, St. John: Fossil plants (90 specimens). Exchange. (D. 11717.)

Ontario.

Geological Survey of Canada, Ottawa: Fossils from Thedford, Ontario (276 specimens, 43 species). Lent for study. Sponge (*Grantia monstruosa*). Gift. (D. 11105, 11763.)

UNITED STATES.

Alabama.

Ninth District Agricultural School, Blountsville: Rocks and ores (104 specimens, set 37). Gift. (D. 11566.)

University of Alabama, Tuscaloosa: Cambrian Medusæ (4 specimens). Gift. (D. 11609.)

Arkansas.

Arkadelphia Methodist College, Arkadelphia: Marine invertebrates (312 specimens, Series VI, set 18). Gift. (D. 11446.)

California.

Brandegee, Katherine, San Diego: Plants (2 specimens). Exchange. (D. 11553.)

Brandegee, T. S., San Diego: Plant (1 specimen). Lent for study. Plants (3 specimens). Exchange. (D. 11368, 11773.)

California Academy of Sciences, San Francisco: Isopods (15 specimens). Gift. (D. 11806.)

California—Continued.

California College, Oakland: Rocks and ores (103 specimens, set 51). Gift. Marine invertebrates (312 specimens, Series VI, set 31). Gift. (D. 11091, 11485.)

Cooke, Miss J. M., San Diego: Shells (103 specimens). Exchange. (D. 11839.)

Fall, H. C., Pasadena: Beetles (136 specimens). Lent for study. (D. 11361.)

Golden Gate Museum, San Francisco: Original stone implements (210 specimens, set 16); casts of arrowheads and spearheads. Exchange. (D. 11296.)

Grinnell, Joseph, Pasadena: Bird skins (57 specimens). Lent for study. (D. 11177, 11233.)

Jordan, David S., Leland Stanford Junior University: Alcoholic fishes (3 specimens); Lamprey eel from Kamchatka (1 specimen). Lent for study. Commander Island fishes (15 specimens). Exchange. (D. 11405, 11750, 11692.)

McGregor, R. C., Palo Alto: Bird skins (11 specimens). Exchange. (D. 11601.)

Colorado.

Lee, Harry A., Denver: Geological material (18 specimens); volcanic rocks (7 specimens). Exchange. (D. 11613, 11841.)

Richardson, D. A., Denver: *Leptosynapta girardii* (1 specimen). Lent for study. (D. 11391.)

University of Denver, University Park: Rocks and ores (set 45). Gift. (D. 11262.)

Connecticut.

Cornell, Mrs. Thomas L., Derby: Pottery (15 specimens). Exchange. (D. 11856.)

Wesleyan University, Middletown: Fossils (32 specimens). Gift. (D. 11622.)

Connecticut—Continued.

Yale University Museum, New Haven:
Palaeonetes antrorum (6 specimens)
and *Cirolanides texensis* (3 specimens).
Exchange. (D. 11729.)

Delaware.

Canby, W. M., Wilmington: Ferns (22 specimens); Mexican plants (838 specimens); plants (265 specimens). Exchange. (D. 11511, 11923, 11950.)

District of Columbia.

Bartsch, Paul, Washington: Plants (12 specimens). Exchange. (D. 11558.)

Central High School, Washington: Marine invertebrates (315 specimens, Series VI, set 5). Gift. (D. 11384.)

Eastern High School, Washington: Marine invertebrates (315 specimens, Series VI, set 5). Gift. (D. 11384.)

Gill, Theodore, Washington: Starfishes (6 specimens). For study. (D. 11549.)

Girty, George H., U. S. Geological Survey, Washington: English carboniferous fossils (211 specimens). Lent for study. (D. 11392.)

Howell, E. E., Washington: Fossils (47 specimens). Exchange. (D. 11742.)

Powell, J. W., Bureau of Ethnology, Washington: Pipes (25 specimens). Lent for study. (D. 11850.)

Schmid, Edward S., Washington: Three bird skins; mounted peacock; skeleton of monkey. Exchange. (D. 11396, 11497, 11858.)

Walcott, C. D., U. S. Geological Survey: One piece of Pueblo pottery. Exchange. (D. 11846.)

Western High School, Washington: Marine invertebrates (Series VI, set 6). Gift. Plants (46 specimens). Exchange. (D. 11385, 11536.)

Florida.

Simpson, J. H., Manatee: Rocks and minerals (70 specimens). Exchange. (D. 11861.)

Georgia.

Georgia Female Seminary, Gainesville: Marine invertebrates (312 specimens, Series VI, set 10). Gift. (D. 11426.)

Lucy Cobb Institute, Athens: Marine invertebrates (312 specimens, Series VI, set 24). Gift. (D. 11452.)

North Georgia Agricultural College, Dahlonega: Marine invertebrates (312 specimens, Series VI, set 36). Gift. (D. 11528.)

Illinois.

Coulter, J. M., University of Chicago, Chicago: Miscellaneous plants (10 specimens). Exchange. (D. 11423.)

Field Columbian Museum, Chicago: Cyprinoid fishes (3 specimens). Exchange. (D. 11678.)

High School, Farmington: Marine invertebrates (312 specimens, Series VI, set 11). Gift. (D. 11427.)

High School, Pittsfield: Marine invertebrates (312 specimens, Series VI, set 22). Gift. (D. 11450.)

High School, Princeton: Marine invertebrates (315 specimens, Series VI, set 41). Gift. (D. 11565.)

High School, Springfield: Rocks and ores (104 specimens, set 40). Gift. (D. 11362.)

High School, Streator: Marine invertebrates (312 specimens, Series VI, set 25). Gift. (D. 11470.)

High School, Table Grove: Marine invertebrates (315 specimens, Series VI, set 43). Gift. (D. 11628.)

Holmes, Samuel J., Chicago: *Lophoranthus* (3 specimens). Lent for study. (D. 11587.)

Irving Park School, Chicago: Rocks and ores (104 specimens, set 32). Gift. (D. 11708.)

Millspaugh, C. F., Chicago: Plants (8 specimens). Lent for study. (D. 11465.)

Moffatt, W. S., Wheaton: Plants (24 specimens). Exchange. (D. 11954.)

Ottawa Township High School, Ottawa: Marine invertebrates (312 specimens, Series VI, set 15). Gift. (D. 11434.)

University of Chicago, Chicago: Volcanic rocks (50 specimens). Exchange. (D. 11527.)

Watase, S., Chicago: Three species of phosphorescent fishes. Lent for study. (D. 11658.)

Indiana.

City public schools, Washington: Marine invertebrates (315 specimens, Series VI, set 1). Gift. (D. 11364.)

Daniels, L. E., Laporte: Shells (208 specimens). Exchange. (D. 11278.)

High School, Evansville: Marine invertebrates (312 specimens, Series VI, set 28). Gift. (D. 11471.)

Indiana—Continued.

Lilly, Eli, & Co., Indianapolis: Plants (11 specimens). Lent for study. (D. 11965.)

Iowa.

- Agricultural College, Ames: Plants (38 specimens). Exchange. (D. 11955.)
 City schools, Osage: Rocks and ores (104 specimens, set 47); marine invertebrates (315 specimens, Series VI, set 4). Gift. (D. 11263, 11383.)
 Cox, L. A., Keokuk: Specimen of Crinoid (*Pentacrinus decorus*). For study. (D. 11770.)
 Denison Normal School and Business College, Denison: Rocks and ores (104 specimens, set 44); marine invertebrates (315 specimens, Series VI, set 3). Gift. (D. 11268, 11382.)
 Des Moines College, Des Moines: Marine invertebrates (312 specimens, Series VI, set 16). Gift. (D. 11444.)
 High School, Algona: Minerals (57 specimens, set 191). Gift. (D. 11764.)
 High School, Clarinda: Rocks and ores (104 specimens, set 36). Gift. (D. 11617.)
 High School, Cresco: Rocks and ores (104 specimens, set 42). Gift. (D. 11349.)
 High School, Innwood: Marine invertebrates (312 specimens, Series VI, set 7). Gift. (D. 11386.)
 High School, Lake Mills: Marine invertebrates (318 specimens, Series VI, set 15). Gift. (D. 11701.)
 High School, Marion: Marine invertebrates (318 specimens, Series VI, set 46). Gift. (D. 11732.)
 High School, Marshalltown: Marine invertebrates (312 specimens, Series VI, set 32). Gift. (D. 11186.)
 High School, New Hampton: Rocks and ores (104 specimens, set 34). Gift. (D. 11629.)
 Oceola County public schools, Sibley: Rocks and ores (104 specimens, set 35). Gift. (D. 11616.)
 Public schools, Forest City, Marine invertebrates (312 specimens, Series VI, set 51); rocks and ores (104 specimens, set 30). Gift. (D. 11788.)
 Public schools, Logan: Marine invertebrates (312 specimens, Series VI, set 21). Gift. (D. 11449.)

Iowa—Continued.

- Public schools, Paullina: Marine invertebrates (318 specimens, Series VI, set 40). Gift. (D. 11556.)
 Public schools, Spencer: Marine invertebrates (315 specimens, Series VI, set 34). Gift. (D. 11508.)
 Public schools, West Bend: Marine invertebrates (312 specimens, Series VI, set 9). Gift. (D. 11425.)
 Sac City Institute, Sac City: Marine invertebrates (318 specimens, Series VI, set 48). Gift. (D. 11711.)
 Western Normal College, Shenandoah: Marine invertebrates (312 specimens, Series VI, set 27). Gift. (D. 11467.)

Kansas.

- Agricultural College, Manhattan: Plants (18 specimens). Exchange. (D. 11953.)
 Campbell University, Holton: Rocks and ores (104 specimens, set 43). Gift. (D. 11332.)
 Chapman, George W., Cawker City: Corals (34 specimens); shells (133 specimens). Exchange. (D. 11907.)
 Cooper Memorial College, Sterling: Marine invertebrates (312 specimens, Series VI, set 33.) Gift. (D. 11498.)
 High School, Lacygne: Dried marine invertebrates (126 specimens). Gift. (D. 11435.)

Kentucky.

- High School, Hopkinsville: Marine invertebrates (318 specimens, Series VI, set 39). Gift. (D. 11561.)

Louisiana.

- Frierson, Lorraine S., Frierson: Unionida (77 specimens). Exchange. (D. 11775.)

Maine.

- Bayley, W. S., Waterville: Geological material (5 specimens). Exchange. (D. 11792.)
 Farmer, Miss Sarah J., Elliott: Photographs of Professor Henry and of experimental apparatus used by him. Lent for exhibition. (D. 11133.)
 High School, Presque Isle: Marine invertebrates (312 specimens, Series VI, set 57); rocks and ores (104 specimens, set 29). Gift. (D. 11905.)
 Knight, O. W., Bangor: *Cistothorus stellularis* (8 specimens). Lent for study. (D. 11933.)

Maine—Continued.

- Lee, L. A., Brunswick: Twenty specimens each of *Scorolis* and *Apus*. Exchange. (D. 11321.)
- Normal School, Gorham: Minerals (57 specimens, set 193). Gift. (D. 11835.)
- Williams, Mrs. Mary Wood, Mount Desert: Casts of Assyrian seals. Exchange. (D. 11175.)

Maryland.

- Maryland School for the Blind, Baltimore: Marine invertebrates (102 specimens). Gift. (D. 11421.)
- Ortmann, Richard, Baltimore: Three photographs of the Morse telegraph register. (D. 11641.)
- Smith, J. Donnell, Baltimore: Plants 8 (specimens). Exchange. (D. 11407, 11596.)
- Woman's College, Baltimore: Cambrian fossils (12 specimens). Exchange. D. 11610.)

Massachusetts.

- Bangs, Outram, Boston: Mammal skulls (10 specimens); 73 alcoholic specimens of mice; 1 skull of mink. Lent for study. (D. 11482, 11716, 11758, 11930.)
- Botanical Gardens, Cambridge: Miscellaneous plants (29 specimens). Exchange. (D. 11408.)
- Dale, T. Nelson, Williamstown: Minerals (54 specimens). Exchange. (D. 11887.)
- Davenport, George E., Medford: Plant (1 specimen). Exchange. Mounted plants (61 specimens). Lent for study. (D. 11466, 11590, 11683.)
- Eastman, C. R., Cambridge: Four plates of *Arthrodives* and part of cranium of *Dinichthys pustulosus*. Lent for study. (D. 11731.)
- Faxon, Walter, Cambridge: Crayfishes (3 specimens); dried crab (1 specimen). Lent for study. (D. 11257, 11357.)
- Greenman, J. M., Cambridge: Mounted plants (126 specimens). Lent for study. One plant. Exchange. (D. 11524, 11525, 11774.)
- Haynes, H. W., Boston: Arrowheads (13 specimens). For study. (D. 11502.)
- Hough, Garry de N., New Bedford: Diptera (70 specimens). Exchange. (D. 11885.)

Massachusetts—Continued.

- Howe, Reginald Heber, jr., Cambridge: Frogs. (34 specimens). Lent for study. (D. 11864.)
- Hyatt, A., Cambridge: Fossil nautiloids (2 specimens). Lent for study. (D. 11746.)
- Museum of Comparative Zoology, Cambridge: Collection of crabs; fishes (*Phycis regius*) (2 specimens); crabs (7 specimens). Exchange. One bird skin. Lent for study. (D. 11387, 11672, 11734, 11918.)
- Robinson, B. L., Cambridge: Plants (514 specimens). Lent for study. Plants (293 specimens). Exchange. (D. 11187, 11611, 11713, 11851.)
- Sargent, C. S., Jamaica Plain: Miscellaneous plants (11 specimens). Exchange. (D. 11454.)
- Sornborger, Jewell D., Cambridge: One white-footed mouse. Lent for study. (D. 11875.)
- Williams College, Williamstown: Minerals (30 specimens). Exchange. (D. 11815.)

Michigan.

- Agricultural Experiment Station, Agricultural College: Plants (4 specimens). Exchange. (D. 11956.)
- High School, Menominee: Rocks and ores (104 specimens, set 31). Gift. (D. 11752.)
- Hubbard, Lucius L., Houghton: Minerals (2 specimens). Exchange. (D. 11933.)

Minnesota.

- Bethlehem Academy, Faribault: Marine invertebrates (300 specimens, Series VI, set 49). Gift. (D. 11718.)
- Heller, A. A., Minneapolis: One plant. Lent for study. (D. 11638.)
- High School, Slayton: Marine invertebrates (315 specimens, Series VI, set 2). Gift. (D. 11381.)

Missouri.

- Bailey, Mrs. A. V., Clarence: Mineralogical specimens. For study. (D. 11612.)
- LaSalle Institute, Glencoe: Marine invertebrates (312 specimens, Series VI, set 8). Gift. (D. 11431.)
- Long, M. E., Kansas City: Stone implements (133 specimens). Exchange. (D. 11161.)

Missouri—Continued.

Missouri Botanical Gardens, St. Louis: Miscellaneous plants (3 specimens). Exchange. (D. 11410.)

Trelease, William, Missouri Botanical Gardens, St. Louis: Lemnaceæ (138 specimens); 268 herbarium specimens. Lent for study. (D. 11183, 11286.)

Montana.

Public schools, Phillipsburg: Marine invertebrates (318 specimens, Series VI, set 37). Gift. (D. 11546.)

Nebraska.

Fremont Normal School, Fremont: Marine invertebrates (318 specimens, Series VI, set 44). Gift. (D. 11615.)

Normal School, Wayne: Marine invertebrates (318 specimens, Series VI, set 47). Gift. (D. 11710.)

Ward, H. B., Lincoln: Helminthological specimens (5 bottles). Lent for study. (D. 11727, 11831.)

New Hampshire.

Grout, A. J., Plymouth: Plants (199 pockets). Lent for study. (D. 11499.)

New Jersey.

Ortmann, A. E., Princeton: Fossils (23 specimens). Lent for study. (D. 11360.)

New York.

American Museum of Natural History, New York: Philippine birds (65 specimens). Exchange. Red squirrels (196 specimens). Lent for study. Plaster cast of the "Temple of the Cross" at Palenque. Gift. (D. 11309, 11802, 11719.)

Bailey, L. H., Cornell University, Ithaca: Plants (388 specimens). Lent for study. (D. 11282, 11785.)

Bean, T. H., New York Aquarium, New York: Fishes. Lent for study. (D. 11579.)

Bentzenmuller, William, New York: Moths (8 specimens). Lent for study. (D. 11462.)

Biological Laboratory, Cold Spring, Long Island: Marine invertebrates (328 specimens, Series V, set 98.) Gift. (D. 11908.)

Boys' High School, New York: Marine invertebrates (306 specimens, Series VI, set 60.) Gift. (D. 11960.)

New York—Continued.

Britton, Mrs. Elizabeth G., New York: Moss (9 pockets). Lent for study. (D. 11656.)

Britton, N. L., Columbia University, New York: Plants (94 specimens); violets, mounted (77 specimens). Lent for study. (D. 11229, 11295, 11886.)

Burgess, Edward S., New York: Herbarium specimens (483). Lent for study. (D. 11483.)

Chapman, Frank M., New York: Bird skins (7 specimens). Lent for examination. (D. 11333.)

Columbia University, New York: Fossil plants (54 specimens); plants (62 specimens). Exchange. (D. 11652, 11951.)

Morgan, Mons. Jacques de, New York: Original stone implements (208 specimens); arrowheads and spearheads (141 specimens). Exchange. (D. 11173.)

Fabius Union School, Fabius: Marine invertebrates (312 specimens, Series VI, set 29). Gift. (D. 11479.)

Froelick, F. W., New York: Chips of eruptive rocks. For examination. (D. 11842.)

High School, Norwich: Marine invertebrates (306 specimens, Series VI, set 59); rocks and ores (104 specimens, set 27). Gift. (D. 11925.)

Hulst, George D., Brooklyn: Moths (50 specimens). Exchange. (D. 11756.)

Kemp, J. F., New York: Specimens of vein rocks. Exchange. (D. 11513.)

Kunz, George F., New York: Ten specimens of jade and nephrite. Exchange. (D. 11938.)

New York Botanical Garden, New York: Plants (907 specimens). Exchange. (D. 11639.)

New York Collegiate Institute, New York: Marine invertebrates (312 specimens, Series VI, set 23). Gift. (D. 11451.)

Osborn, H. F., New York: Two teeth of *Coryphodon*. Lent for study. (D. 11772.)

Ottolengui, R., New York. Moths (9 specimens). Lent for study. (D. 11266.)

Public Schools, Ithaca: Marine invertebrates (309 specimens, Series VI, set 58); rocks and ores (104 specimens, set 28). Gift. (D. 11910.)

New York—Continued.

- Ries, Heinrich, New York: Clays and kaolins (25 specimens). For examination. (D. 11696.)
- Rowlee, W. W., Ithaca: Plants (126 specimens). Lent for study. (D. 11637, 11784.)
- Rydberg, P. A., Brooklyn: Plants (154 specimens). Lent for study. (D. 11338, 11573.)
- Small, John K., Herbarium, Columbia University, New York: Plants (767 specimens). Lent for study. (D. 11107, 11402, 11606, 11872.)
- Snow, Charles H., New York: Six photographs of wood bored by crustaceans. (D. 11574.)
- Underwood, L. M., New York: Plants (6 specimens). Lent for study. Plants (3 specimens). Exchange. (D. 11691.)
- University of the City of New York, New York: Ethnological material (57 specimens); zinc metallurgical series (12 specimens); marine invertebrates (529 specimens, Series V, set 46); sample of wood bored by *Chelura terebrans* with specimens of the latter. Gift. (D. 11079, 11645.)

North Carolina.

- Ashe, W. W., Raleigh: Plants (67 specimens). Lent for study. (D. 11205.)
- Beadle, C. D., Biltmore: Plants (68 specimens). Lent for study. (D. 11541.)
- Biltmore Herbarium, Biltmore: Plants (327 specimens). Exchange. (D. 11949.)
- Elon College, Elon College P. O.: Marine invertebrates (318 specimens, series VI, set 50); casts of stone implements (99 specimens, set 61). Gift. (D. 11736.)
- Wake Forest College, Wake Forest: Marine invertebrates (312 specimens, series VI, set 17). Gift. (D. 11445.)

Ohio.

- Herrick, Francis H., Cleveland: Alpheidæ (857 specimens). Lent for study. (D. 11730.)
- High School, Lewistown: Rocks and ores (104 specimens, set 38). Gift. (D. 11406.)
- Hine, Joseph S., Columbus: Insects (8 specimens). Lent for study. (D. 11236.)

Ohio—Continued.

- North High School, Columbus: Marine invertebrates (312 specimens, series VI, set 19). Gift. (D. 11447.)

Pennsylvania.

- Carnegie Museum, Pittsburg: Mold of *Octopus* sp. Lent for study. (D. 11265.)
- Crawford, J. G., Wilkensburg: Foraminifera (4 vials). Lent for study. (D. 11881.)
- Dickinson College, Carlisle: Marine invertebrates (312 specimens, series VI, set 20). Gift. (D. 11448.)
- High School, Greensburg: Marine invertebrates (318 specimens, series VI, set 35). Gift. (D. 11509.)
- Philadelphia Academy of Sciences, Philadelphia: Miscellaneous plants (7 specimens). Exchange. (D. 11409.)
- Public Schools, Reynoldsville: Marine invertebrates (312 specimens, series VI, set 30). Gift. (D. 11480.)
- Rhoads, S. N., Philadelphia: Skin of chipmunk; 7 skulls of otter. Lent for study. (D. 11580, 11655.)
- Rush, W. H., U. S. N., Philadelphia: Shells (4569 specimens). Exchange. (D. 11438.)
- Stone, Witmer, Philadelphia: Bird skins (25 specimens). Lent for examination. (D. 11210.)
- The Western Philadelphia Historical Society, Bellevue: Stone implements (137 specimens); plaster casts of stone implements (16 specimens); 18 strings of beads. Exchange. (D. 11488.)
- University of Pennsylvania, Philadelphia: Fishes (59 specimens); marine invertebrates (465 specimens, series V, set 51); sponges from Florida and Nassau. Gift. (D. 11293, 11677.)
- Wagner Free Institute of Science, Philadelphia: Marine invertebrates (440 specimens, series V, set 52). Gift. (D. 11814.)

Rhode Island.

- Brown University, Providence: Bird skins (2 specimens). Exchange. (D. 11521.)

South Carolina.

- Manigault, G. E., Charleston: Figure of negro boy. Exchange. (D. 11723.)
- Wayne, Arthur T., Mount Pleasant: Bird skin. Exchange. (D. 11093.)

South Carolina—Continued.

Winthrop Normal and Industrial College, Rock Hill: Marine invertebrates (318 specimens, series VI, set 38). Gift. (D. 11560.)

Tennessee.

University of Tennessee, Knoxville: Casts of prehistoric implements (99 specimens); marine invertebrates (448 specimens, series V, set 48). Gift. (D. 11351.)

Texas.

Mearns, Dr. E. A., U. S. Army, Fort Clark: Mammal skins and skulls (421 specimens); bird skins (96 specimens). Lent for study. (D. 11659, 11660.)

University of Texas, Austin: Plants (2 specimens). Exchange. (D. 11633.)

Utah.

Jones, Marcus E., Salt Lake City: Plants (346 specimens). Exchange. (D. 11453, 11942.)

Vermont.

Stickney, W. B. A., Woodstock: Plants (19 specimens). Exchange. (D. 11849.)

Virginia.

Bridgewater College, Bridgewater: Marine invertebrates (312 specimens, series VI, set 13). Gift. (D. 11457.)
Stephens City Academy, Stephens City: Marine invertebrates (309 specimens, series VI, set 26). Gift. (D. 11463.)
Surber, Thaddeus, White Sulphur Springs: Skins and skulls of *Spermophilus franklini* and *Sciurus alberti*. Exchange. (D. 11365.)

Washington.

Puget Sound University, Tacoma: Marine invertebrates (452 specimens, series V, set 47). Gift. (D. 11284.)
Whitman College, Walla Walla: Marine invertebrates (315 specimens, series VI, set 42). Gift. (D. 11614.)

Wisconsin.

High School, Evansville: Rocks and ores (104 specimens, set 33). Gift. (D. 11709.)
High School, Marinette: Rocks and ores (104 specimens, set 41). Gift. (D. 11348.)
High School, Sparta: Rocks and ores (104 specimens, set 48). Gift. (D. 11149.)

Wisconsin—Continued.

Milwaukee Public Museum, Milwaukee: Bird skins (21 specimens). Lent for study. (D. 11121.)

West Division High School, Milwaukee: Marine invertebrates (312 specimens, series VI, set 12). Gift. (D. 11432.)

Whitewater High School, Whitewater: Marine invertebrates (312 specimens, series VI, set 14). Gift. (D. 11433.)

Wyoming.

Wyoming Collegiate Institute, Big Horn: Rocks and ores (104 specimens, set 38). Gift. (D. 11474.)

SOUTH AMERICA.

ARGENTINA.

Ruscherveyh, G., Buenos Aires: Lepidoptera (75 specimens). Exchange. (D. 11400.)

ASIA.

INDIA.

Indian Museum, Calcutta: Bird skins (54 specimens). Exchange. (D. 11520.)

Royal Botanic Gardens, Bengal: Plants (188 specimens). Exchange. (D. 11961.)

JAPAN.

Imperial Fisheries Bureau, Tokyo: Lucernarians (6 specimens). Exchange. (D. 11650.)

University of Tokyo, Tokyo: Marine invertebrates (444 specimens, Series V, set 50); Lamprey eels (4 specimens). Gift. (D. 11458, 11694.)

EUROPE.

AUSTRIA.

Imperial Royal Natural History Hofmuseum, Vienna: Lower Cretaceous fossils (41 specimens). Exchange. (D. 11603.)

Wohlgemuth, Karl, Bozen, South Tyrol: Ethnological specimens (13). Exchange. (D. 11669.)

DENMARK.

Meinert, F., Zoological Museum, Copenhagen: Specimens belonging to the genus *Pycnogonida*. Lent for study. (D. 11347.)

Zoological Museum, Copenhagen: 22 specimens of *Pycnogonida*. Exchange. (D. 11347.)

FRANCE.

- Cossmann, M., Paris: Fossils (6 specimens). Lent for study. Shells (149 specimens). Exchange. (D. 11779, 11890.)
- Koehler, R., Lyons: Collection of Echinoderms (52 specimens). For study. (D. 11095.)
- Michaels, J. Porter, Paris: Human teeth from mounds and burial places (39 specimens). Lent for study. (D. 11378.)

GERMANY.

- Botanical Museum, Berlin: Plants (135 specimens). Exchange. (D. 11948.)
- Frobenius, L., Leipzig: Pottery (21 specimens). Exchange. D. 11624.)
- Helmolt, Dr., Leipzig: Photograph of model of the Tower of Babel. (D. 11581.)
- Paleontological Museum of the Royal Academy, Munich: Cambrian fossils (16 specimens). Exchange. (D. 11621.)

GREAT BRITAIN.

ENGLAND.

- Baker, E. G., London: Mounted plants (2 specimens). Lent for study. Plants (16 specimens). Exchange. (D. 11687.)
- British Museum, London: Dried plants (700 specimens). Exchange. (D. 11891.)
- Durant, J. Hartley, Thetford: Insects. Lent for study. (D. 11324.)
- Lovett, Edward, Croydon: Casts of bow-drill handles. Exchange. (D. 11456.)
- Manchester Museum, Manchester: Specimen of *Pentacrinus decorus*. Exchange. (D. 11359.)
- Moses, W., Ashton-under-Lyne: Alcoholic mollusks (8 specimens). For study. (D. 11762.)
- Owens College, Manchester: Collection of Cephalopods. Lent for study. (D. 11369.)
- Royal Botanic Gardens, Kew: Seeds of Mexican plants (31 packages). Exchange. Plants (52 specimens); 3 unmounted plants and 2 photographs; 5 mounted plants and 1 colored drawing. Lent for study. (D. 11367, 11523, 11922.)

SCOTLAND.

- Museum of University College, Dundee: Marine invertebrates (448 specimens, Series V, set 49). Gift. (D. 11424.)

ITALY.

- Zoological Museum, Turin: American water crustaceans (54 specimens). Exchange. (D. 11086.)

NETHERLANDS.

- Ethnological Museum, Leyden: Plaster cast of patu - patu. Gift. (D. 11625.)
- de Meyera, Johannes C. H., Amsterdam: Insects (366 specimens). Exchange. (D. 11468.)

NORWAY.

- Geological Survey, Christiania: Selenite crystal. Exchange. (D. 11625.)

RUSSIA.

- Branicki Museum, Warsaw: Bird skins (170 specimens). Exchange. (D. 11110.)
- Melnikoff, M., St. Petersburg: Specimen of meteorite. Exchange. (D. 11675.)
- Zoological Museum of the Imperial Academy of Sciences, St. Petersburg: Shells (2024 specimens). Exchange. (D. 11085.)

SWEDEN.

- Natural History Museum of the Academy of Sciences, Stockholm: Fishes (15 specimens). Exchange. (D. 11082.)
- Royal Museum of Natural History, Stockholm: Actinians (62 specimens). Exchange. (D. 11808.)

SWITZERLAND.

- Museum of Natural History, Geneva: Crustacea (46 specimens). Exchange. (D. 11184.)

OCEANICA.

AUSTRALIA.

- New South Wales, Ogilby, J. Douglas, Sydney: Fishes (9 specimens). Exchange. (D. 11626.)

APPENDIX IV.

BIBLIOGRAPHY OF THE U. S. NATIONAL MUSEUM FOR THE YEAR ENDING JUNE 30, 1898.

PUBLICATIONS OF THE MUSEUM.¹

ANNUAL REPORT.

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|---|--|
| Annual Report of the Board of Re-
gents of the Smithsonian Institu-
tion, Showing the Operations, Ex-
penditures, and Condition of the In-
stitution for the year ending June | 30, 1895. — Report of the U. S. Na-
tional Museum. — Washington:
Government Printing Office. 1897.
8vo, pp. 1-xx, 1-1084, 156 pls., 382 figs. |
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PROCEEDINGS.

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|--|--|
| Smithsonian Institution. United States
National Museum, — Proceedings
of the United States National Mu-
seum. — Volume XIX. — Published | under the direction of the Smithso-
nian Institution. — Washington:
 Government Printing Office. 1897.
8vo, pp. 1-viii, 1-864, pls. 1-lxviii, 53 figs. |
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BULLETIN.

- | | |
|--|---|
| Smithsonian Institution. United States
National Museum. — Directions for col-
lecting and preserv ing Scale Insects
(Coccidae). By T. D. A. Cockerell,
Entomologist of the New Mexico Agricul-
tural Experiment Station. — Part | L of Bulletin of the United States Na-
tional Museum, No. 39. — Washing-
ton: Government Printing Office.
1897.
8vo. pp. [1]—[9]. |
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PAPERS BY OFFICERS OF THE NATIONAL MUSEUM AND OTHERS, BASED UPON MUSEUM MATERIAL.

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|--|---|
| AGASSIZ, ALEXANDER. Reports on the
dredging operations off the west coast
of Central America to the Galapagos, to
the west coast of Mexico, and in the
Gulf of California, in charge of Alexan-
der Agassiz, carried on by the U. S. Fish
Commission steamer <i>Albatross</i> , during
1891, Lieut. Commander Z. L. Tanner,
U. S. Navy, commanding. XXIII.—Pre-
liminary report on the <i>Echini</i> .
<i>Bull. Mus. Comp. Zool., Harvard College,</i>
xxxii, No. 5, June, 1898, pp. 71-86, pls.
1-xiii and pl. A.
Five new genera and 24 new species are
described and figured, the descriptions being
prefaced by general remarks on the distribu-
tion of Pacific <i>Echini</i> . | ANTHONY, A. W. Two new birds from
the Pacific coast of America.
<i>Auk</i> , xv, No. 1, Jan., 1898, pp. 36-38.
<i>Anous stolidus ridgwayi</i> and <i>Oceanodroma</i>
<i>kadingi</i> are described as new.
— Four sea birds new to the fauna
of North America.
<i>Auk</i> , xv, No. 1, Jan., 1898, pp. 38-39.
The following species, new to the avifauna
of North America, are announced from the
coast of Lower California: <i>Diomedea immu-</i>
<i>tabilis</i> , <i>Puffinus auricularis</i> , <i>P. eucatois</i> , and
<i>Phaethon rubricaudus</i> .
ASHMEAD, WILLIAM H. Descriptions
of two new fossorial wasps.
<i>Psyche</i> , viii, Oct., 1897, pp. 129-130.
Describes <i>Astata leuthstromi</i> and <i>Plenoculus</i> |
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¹ The titles of the papers from the Report, Proceedings, and "parts" of Bulletins which were published in separate form during the year are given in Appendix V.

ASHMEAD, WILLIAM H.—Continued.

peckhami. The types are in the National Museum.

— Notes on some European Hymenopterous parasites of the Hessian-fly, *Cecidomyia destructor* Say, and other insects, bred by Dr. Paul Marchal, the French Government entomologist.

Psyche, VIII, Nov., 1897, pp. 135-138.

Records the hosts of 13 species of parasites bred by Dr. Paul Marchal, and describes 2 new species, *Bwotomus coxalis* and *Holcoeus cecidomyiæ*.

— Description of five new genera in the Cynipidæ.

Canadian Entomologist, XXIX, Nov., 1897, pp. 260-263.

Describes *Xystoteras*, n. g., type *X. volutellæ*; *Zopheroteras*, n. g., type *Biorrhiza forticornis* Walsh; *Parateras*, n. g., type *hubbardi*, n. sp.; *Asclepiadiphila*, n. g., type *stephanotidis*, n. sp.

— An egg parasite of *Smerinthus astylus* Drury.

Ent. News, IX, Jan., 1898, p. 124.

Describes *Anastatus pearsalli*, n. sp.

— Description of five new Hymenopterous parasites on *Canarsia hammondi* Riley.

Proc. Ent. Soc. Wash., IV, 1898, No. 2, pp. 124-131.

Describes and figures *Spilocryptus canarsisæ*, *Limmeria (Sinophorus) canarsisæ*, *Apanoteles canarsisæ*, *Elasmus mctori* and *Tetrastichus coeruleus*.

— A new species of *Roptronia*.

Proc. Ent. Soc. Wash., IV, 1898, No. 2, pp. 132, 133.

Describes *Roptronia garmani*, n. sp., and gives a table of the known species, in which another species from California is characterized under the name *R. californica*.

— [Table of the genera of the Xyelidæ.]

Psyche, VIII, May, 1898, p. 214.

This is a table of the genera of the family Xyelidæ furnished to Dr. H. G. Dyar for his MS., in which two new genera, *Megaxyela* and *Manoxyela* are characterized. The types are in the National Museum.

— Classification of the Horntails and Sawflies, or the suborder Phytophaga.

Canadian Entomologist, XXX, June, 1898, pp. 141-145.

In this contribution, which represents No. 1 of the series, the author separates these

ASHMEAD, WILLIAM H.—Continued.

insects into 15 distinct families, and gives dichotomous tables for their recognition.

(See also under GEORGE DIMMOCK.)

BANGS, OUTRAM. On some birds from Santa Marta, Colombia.

Proc. Biol. Soc. Wash., XII, June 3, 1898, pp. 131-144.

A briefly annotated list of 134 species obtained in the Santa Marta region of Colombia, of which the following are new: *Galbula ruficauda pollens*, *Melanerpes wagleri sanctæ-martæ*, *Dendrocicla olivacea anguina*, *Sycalis browni*, *Cyanocompsa concreta sanctæ-martæ*, *Arremonops conirostris canens*, *Piranga faceta*, *Cyclarhis flavipectus canticus*, *Dacnis napeæ* and *Merula incompta*.

BARTSCH, PAUL. *Uria lomvia*. An addition to the Avifauna Columbiana.

Auk, XIV, No. 3, July, 1893, pp. 312, 313.

The taking of 6 specimens of this species on the Potomac near Washington is here recorded. This record adds the family Alcidae to the Avifauna Columbiana.

— A few notes on the Avifauna Columbiana.

Auk, XIV, No. 3, July, 1897, p. 326.

Notes on the occurrence of *Elaenoides forficatus* and *Geothlypis agilis*. An early breeding date of *Cathartes aura* (in the spring of 1897) is here mentioned.

— Summer birds of the Oneota Valley.

Iowa Ornithologist, III, No. 4, Oct., 1897, pp. 51-62.

A paper read at the Third Congress of the Iowa Ornithological Association, discussing the birds observed on the expedition to the Oneota Valley in the summer of 1895. A list of 98 species, with copious notes under each, follows the general discussion of the surface features and climatic conditions of the region.

— The breeding of the Carolina Parquet in captivity by Dr. Nowatny.

Auk, XV, No. 1, Jan., 1898, pp. 28-32.

Translation of a letter by Dr. Nowatny in "Die Freundlandischen Stubenvogel ihre Naturgeschichte, Pflege und Zucht." (Vol. III, Pt. 10, p. 838 et seq.)

— An early morning ramble in autumn in the will-be Potomac Park.

Bull. Wilson Ornithological Chapter of the Agassiz Association, No. 18, Jan., 1898, pp. 1-3.

This paper gives an account of a visit to the park on October 9, 1897, with notes on the fauna and flora.

BEAN, BARTON A.

(See under TARLETON H. BEAN.)

- BEAN, TARLETON H. Notes on Mexican fishes obtained by Dr. Carl Lumholtz.
Bull. Amer. Mus. Nat. Hist., x, May 7, 1898, pp. 165-168.
- BEAN, TARLETON H., and BARTON A. Description of a new blenny-like fish of the genus *Opisthocentrus*, collected in Vulcano Bay, Port Mororan, Japan, by Nicolai A. Grebnitski.
Proc. U. S. Nat. Mus., xx, No. 1127, pp. 463, 464, pl. xxxv.
- BENEDICT, JAMES E. A revision of the genus *Synidotea*.
Proc. Acad. Nat. Sci. Phila., 1897, pp. 389-404, figs. 1-13.
 Of the 15 species referred to the genus *Synidotea*, 7 are described as new and 12 are in the National Museum collection. The species are distributed chiefly in the North Pacific and Arctic oceans, though a few are from the North Atlantic and South African oceans. The bathymetrical range is from shallow water to 695 fathoms.
- The Arcturidæ in the U. S. National Museum.
Proc. Biol. Soc. Wash., xii, Mar. 24, 1898, pp. 41-51, figs. 3-11.
 Twenty-five species are recognized in the genus *Arcturus*, 6 of which are new. Two new species of *Astacilla* are described, 1 of which is a blind form from deep water off Marthas Vineyard.
- Two new Isopods of the genus *Idotea*, from the coast of California.
Proc. Biol. Soc. Wash., xii, Mar. 24, 1898, pp. 53-55, figs. 12, 13,
 The species described belong to *Idotea* as defined by Miers. *Idotea rostrata*, n. sp., together with *I. carinata* Lucas, may, however, eventually form a distinct genus.
- BERNARD, FELIX. Anatomie de *Chlamydoconcha orcutti* Dall, lamellibranche à coquille interne.
Ann. Sci. Nat., Zoologie, 8me ser., iv, Paris, 1897, pp. 221-252, pls. 1, 2.
 This paper is based upon dissections of a duplicate specimen of the species mentioned, furnished by the Division of Mollusks. The original types of the species form part of the national collection.
- BOAS, FRANZ. The social organization and the secret societies of the Kwakiutl Indians.
Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 311-738, pls. 1-51, figs. 1-215.
- BUSH, KATHARINE JEANNETTE. Revision of the marine Gastropods referred to *Cyclostrema*, *Adeorbis*, *Vitri-nella*, and related genera, with descriptions of some new genera and species belonging to the Atlantic fauna of America.
Trans. Conn. Acad. Sci., x, July, 1897, pp. 97-144, pls. xxii, xxiii.
 This paper, the scope of which is indicated by its title, is based in large part on deep-sea material collected by the U. S. Fish Commission, and now belonging to the National Museum.
 (See also under A. E. VERRILL.)
- CANTWELL, GEORGE G. Notes on the egg of the Marbled Murrelet.
Auk, xv, No. 1, Jan., 1898, p. 49.
 Reference is made to an egg of this species which was removed from a dead bird. The egg is described by Dr. W. L. Ralph.
- CHAPMAN, FRANK M. Preliminary descriptions of new birds from Mexico and Arizona.
Auk, xiv, No. 3, July, 1897, pp. 310, 311.
Contopus pertinax pallidiventris, from Arizona, and *Coccothraustes vespertinus mexicanus*, from Mexico, are described as new. The name *Spinus pinus macroptera* (DuBus) is used to distinguish the Mexican form of the Pine Siskin.
- CHITTENDEN, FRANK H. Notes on certain species of Coleoptera that attack useful plants.
Bull. Div. Ent., U. S. Dept. Agric., No. 9 (New series), Oct. 21, 1897, pp. 20-24.
 Records of new food plants and of biological facts concerning certain species of Coleoptera, chiefly Chrysomelidæ.
- On the parasites of adult Coleoptera.
Proc. Ent. Soc. Wash., iv., Jan. 12, 1898, pp. 75-79.
 Mention of certain species of parasitic Hymenoptera and Diptera (belonging to the families Sarcophagidæ, Braconidæ, Chalcididæ, and Tachinidæ), which affect the adults of some species of Coleoptera.
- The Celery Leaf-tyer, *Phlyctænia ferrugalis* Hbn.
Weekly Florists' Review, i, Mar. 3, 1898, pp. 571, 572.
 A popular account given in answer to a correspondent.
- Notes on Cucumber Beetles.
Bull. Div. Ent., U. S. Dept. Agric., No. 10 (New series), Mar. 26, 1898, pp. 26-31.
 The species considered are *Diabrotica vittata* and *D. 12-punctata*.

CHITTENDEN, FRANK H.—Continued.

— Insects that affect Asparagus.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 54-62.

Notes on *Crioceris asparagi*, *C. 12-punctata*,
Diabrotica 12-punctata, with shorter notes on
about twenty other species of insects observed
on asparagus.

— The Bean Leaf-beetle, *Cerotoma trifurcata* Forst.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 64-71.

A detailed general account of this species
with original observations, including descrip-
tions of the egg and larva.

— The Tobacco Flea-beetle, *Epitrix parvula* Fab.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 79-82.

Observations upon the biology of this species
with a review of its economic literature and
a brief description of its different stages.

— A little-known Tineid moth of indoor habits.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 90, 91.

A note on the occurrence of *Monopis (Tinea)*
ferruginella indoors; its habits, appearance,
and distribution.

— Another moth likely to be mistaken for *Tinea granella*.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, p. 91.

A short note on *Tinea misella*.

— Parasites of bean and cowpea weevils.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, p. 94.

Mentions *Eupelmus cyaniceps*, *Bruchobius laticollis*, *Cephalonomia* sp., and *Aplastomorpha prattii*.

— The Fruit-tree Bark-beetle, *Scolytus rugulosus* Ratz.

Circ. Div. Ent., U. S. Dept. Agric., No. 29
(Second series), Mar. 30, 1898, pp. 1-8.

A popular economic account with some
original observations.

— The Striped Cucumber Beetle, *Diabrotica vittata* Fab.

Circ. Div. Ent., U. S. Dept. Agric., No. 31
(Second series), May 5, 1898, pp. 1-7.

A popular economic consideration of this
species, with special attention to methods of
control.

— The larger apple-tree borers.

Circ. Div. Ent., U. S. Dept. Agric., No. 32
(Second series), June, 1898, pp. 1-11.

CHITTENDEN, FRANK H.—Continued.

A general consideration of *Saperda candida*,
S. cretata, and *Chrysobothris femorata*, with
particular attention to remedial treatment.

COCKERELL, T. D. A. The food plants of scale insects (Coccidæ).

Proc. U. S. Nat. Mus., xix, No. 1122. Aug.
2, 1897, pp. 725-785.

— Directions for collecting and preserving scale insects (Coccidæ).

Bull. U. S. Nat. Mus., No. 39, Pt. L, 1897,
pp. [1]-[7].

COOK, O. F. On *Anodontostoma*.

Brandtia, Nov., 1897, pp. 61-63.

Emends the original descriptions of Haase
and recognizes *Anodontostoma* and *Alipes* as
types of distinct families of Chilopoda.

— New Gomphodesmidæ.

Brandtia, Nov., 1897, pp. 65-67.

Synopsis of subfamilies and genera, seven
of the latter being new.

— The species of *Alipes*.

Brandtia, Nov., 1897, pp. 69-72.

Unites *Alipes grandidiera* Lucas, *A. crotalus*
Gerstäcker and *A. multicostris* Imhoff, and de-
scribes 3 new species. Also contains a note
on the stridulating organs of this aberrant
Chilopod.

— New relatives of *Spirobolus giganteus*.

Brandtia, Nov., 1897, pp. 73-75.

Describes 6 new species under the new
genus *Pachybolus*, all from tropical Africa.
Following is a synopsis of allied African
genera, of which 3 are new.

— A revision of tropical African Diplopoda of the family Strongylosomatidæ.

Proc. U. S. Nat. Mus., xx, 1898, pp. 695-708.

Descriptions of the 6 genera and 14 species
thus far known, of which 3 genera and the
same number of species are new.

COQUILLET, D. W. Revision of the Tachinidæ of America north of Mexico.

Bull. Div. Ent., U. S. Dept. Agric. (Tech-
nical series), No. 7, Oct., 1897, 156 pp.

This paper treats of the habits of these in-
sects and gives a list of the insect hosts of
the bred species, together with a description
of the species represented in the National
Museum. Describes 11 new genera and 90
new species.

— On *Cuterebra emasculator*, with descriptions of several allied species.

Canadian Entomologist, xxx, Jan., 1898,
pp. 9-11.

Describes 5 new species.

COQUILLET, D. W.—Continued.

— The Buffalo-gnats or Black-flies of the United States.

Bull. Div. Ent., U. S. Dept. Agric., No. 10 (New series), Mar., 1898, pp. 66-69.

A brief account of the habits of these flies, together with a synoptic table of the species, two of which are new.

— On the habits of the Oscinidae and Agromyzidae reared at the U. S. Department of Agriculture.

Bull. Div. Ent., U. S. Dept. Agric. (New series), No. 10, pp. 70-79.

Records the breeding habits of 36 species.

— Notes and descriptions of Oscinidae.

Journ. N. Y. Ent. Soc., vi, Mar., 1898, pp. 44-49.

Gives a synoptic table of the 13 genera, one of which is new, and describes 13 new species.

COVILLE, FREDERICK VERNON. Notes on the plants used by the Klamath Indians of Oregon.

Contrib. U. S. Nat. Herbarium, v, June 9, 1897, pp. 87-108.

— Observations on recent cases of mushroom poisoning in the District of Columbia.

Circ. Div. Botany, U. S. Dept. Agric., No. 13, Dec. 1, 1897, 21 pp., with fig. Rev. ed., Jan. 4, 1898, 24 pp., fig. 27.

— The Shasta Fir, *Abies shastensis*.

Garden and Forest, x, Dec., 1897, p. 516.

— Forest growth and sheep grazing in the Cascade Mountains of Oregon.

Bull. Div. Forestry, U. S. Dept. Agric., No. 15, 1898, 54 pp.

CULIN, STEWART. American Indian games.

Bull. Mus. Science and Art, Univ. Pa., i, No. 3, pp. 1-15, 9 illus.

CURRIE, ROLLA P. New species of North American Myrmelionidae. 1.

Canadian Entomologist, xxx, Apr., 1898, pp. 93-96.

Describes *Brachynemurus coquilletti*.

— New species of North American Myrmelionidae. 2.

Canadian Entomologist, xxx, May, 1898, pp. 134-140.

Describes *Brachynemurus niger* and *B. quadripunctatus*.

DALL, WILLIAM HEALEY. Alaska and the new gold fields.

DALL, WILLIAM HEALEY—Continued.

Foran, Sept., 1897, pp. 16-26.

A summary of the meteorological, geographical, and geological conditions in the region referred to.

— Synopsis of the Pinnidae of the United States and West Indies.

Nautilus, xi, No. 3, July, 1897, pp. 25, 26.

This paper contains a revision of the nomenclature and a list of the species.

— Notes on land shells from the Malay Peninsula.

Nautilus, xi, No. 4, Aug., 1897, pp. 37, 38.

A short list of species collected by Dr. W. L. Abbott. One species, *Nanina (Macrochlamys) diadema*, is described as new.

— On a new *Holospira* from Texas.

Nautilus, xi, No. 4, Aug., 1897, p. 38.

Holospira (Haplostemma) haniltoni, from Brewster County, is described as new.

— Glimpses of southern Oregon.

Nation, New York, lxxv, Sept. 9, 1897, pp. 201, 202; Sept. 16, 1897, pp. 221, 222.

A brief summary of topographical and sociological features of the region mentioned.

— Letter to the editor.

Science (New series), vi, No. 147, Oct. 22, 1897, pp. 633, 634.

A letter calling attention to the dangers in the use of formalin for museum purposes.

— New land shells from Mexico and New Mexico.

Nautilus, xi, No. 6, Oct., 1897, pp. 61, 62.

Holospira (Haplostemma) cockerelli (p. 61), *Eucalodium hippocastaneum* (p. 61), *Coelocentrum astrophorea* (p. 62), and *Schazicheila hidalgona* (p. 62) are described as new.

— Editorial correspondence.

Nautilus, xi, No. 6, Oct., 1897, p. 66.

A letter summing up the shore fauna of mollusks observed by the writer at Coos Bay, Oregon.

— Notes on the paleontological publications of Prof. William Wagner.

Trans. Wagner Free Inst. Sci., v, Oct., 1897, pp. 7-11, pls. I-III.

This paper comprises a synopsis of Professor Wagner's publications, and an explanation of three plates prepared in 1859 for Professor Wagner, but unpublished hitherto, although a few copies with manuscript names had been sent out. The following species appear to be new: *Arca virginica* (Wagner MS.), p. 9, pl. I, fig. 3; *Arca carolinensis* (Wagner MS.), p. 9, pl. I, fig. 4; *Modiola gigas* (Wagner MS.), p. 10, pl. II, fig. 3; *Cancellaria antiqua* (Wagner MS.), p. 11, pl. III, fig. 3. The types of several of these species exist in the

DALL, WILLIAM HEALEY—Continued.

collection of the Wagner Institute and have been generously shared with the National Museum. They are from the Chesapeake Miocene of Maryland and Virginia.

— New species of Mexican land shells.

Nautilus, XI, No. 7, Nov., 1897, pp. 73, 74.

Helix (*Lysinoë*) *queretaroana* (p. 73), *Helix* (*Lysinoë*) *sebastiana* (p. 73), *Polygyra nelsoni*, and a variety *collusella* (p. 74) are described as new. The types are in the National Museum.

— New West American shells.

Nautilus, XI, No. 8, Dec., 1897, pp. 85, 86.

Stigaretus oldroydi (p. 85), from Catalina Island, California; *Pecten palmeri* (p. 85), from the Gulf of California; *Pecten randolphi* (p. 86), from the coast of Washington, and *Pecten davidsoni* (p. 86), from Bering Sea, are described as new. The types of *Pecten* are in the National Museum.

— Notice of some new or interesting species of shells from British Columbia and the adjacent region.

Bull. Nat. Hist. Soc. British Columbia, II, 1897, pp. 1-18, pls. I, II.

The following species described as new: *Crenella columbiana* (p. 4, pl. I, figs. 3, 5), *Crenella leana* (p. 4, pl. I, figs. 6-7), *Crenella japonica* (p. 5, pl. I, fig. 2), *Modiolaria taylora* (p. 5, pl. I, figs. 17, 18), *Modiolaria seminuda* (p. 5, pl. I, fig. 1), *Nucula carlottensis* (p. 6, pl. I, figs. 15, 16), *Leda cellulita* (p. 7, pl. II, figs. 5, 7), *Leda extenuata* (p. 8, pl. II, fig. 2), *Yoldia ensifera* (p. 9, pl. II, fig. 4), *Yoldia martyria* (p. 9, pl. II, fig. 15), *Malletia faba* (p. 10, pl. II, fig. 10), *Malletia gibbsii* (p. 10, pl. 2, fig. 14), *Malletia pacifica*, *Malletia* (*Tindaria*) *kennerleyi* (p. 11, fig. 9), *Macoma liotricha* (p. 12, pl. I, fig. 21), *Cadulus hepburni* (p. 12, pl. I, fig. 13), *Cadulus tolmiei* (p. 13, pl. I, fig. 8), *Cythara victoriana* (p. 13, pl. I, fig. 9), *Mumiola tenuis* (p. 13, pl. I, fig. 10), *Odosstomia* (*Miralda*) *inflecta* (p. 14), *Rissoina newcombei* (p. 14, pl. I, fig. 12), *Molleria quadrae* (p. 15, pl. I, figs. 14, 14a), and *Eucosmia lurida* (p. 15, pl. I, fig. 11). *Yoldia scissurata* Dall (p. 8) is proposed for *Y. aretica* Brod. non Gray, and the unfigured *Modiolaria vernicosa* Midd., *Leda fossa* Baird, *Leda cellulita* Dall, *Leda leonina* Dall, and *Yoldia montereyensis* Dall, are figured. All are from the North Pacific and most of them from the northwest coast of America. The types are in the U. S. National Museum and the Colonial Museum of British Columbia.

— On a new species of *Vitrea* from Maryland.

Nautilus, XI, No. 9, Jan., 1898, pp. 100-101.

Vitrea raderi (p. 100), from Cumberland, Md., is described as new, and the varietal name *Olingmani* is proposed for the large form of *Zonites wheatleyi* Bd., from Clingman's

DALL, WILLIAM HEALEY—Continued.

Peak, North Carolina. Both types are in the National Museum.

— Florida's interesting fossils.

Florida Times-Union, Feb., 1898.

This article is contained in a special edition of the *Times-Union* devoted to the resources of the State.

The paper discusses the Tertiary fossil faunas of the State, and figures (from specimens in the National Museum) six of the most remarkable and characteristic species.

— Recent progress in malacology.

Science (New series), VII, No. 167, Mar. 11, 1898, pp. 334-337.

A summary of new facts brought out in recent malacological and paleontological papers. The term "provinculum" is suggested for the larval hinge of bivalves, recently shown by Bernard to precede the development of the regular hinge.

— How phosphate came.

Florida Times-Union, Mar. 13, 1898.

A summary of the present opinion of geologists as to the source and formation of the Floridian deposits of phosphate of lime.

— Coal and lignite.

Map of Alaska, U. S. Geol. Surv. (descriptive text), Mar., 1898, pp. 39-44.

This article is contained in the descriptive text of a map of Alaska prepared by the United States Geological Survey in accordance with a resolution of Congress. Mr. Dall gives a synopsis of our knowledge of the coal and lignite of Alaska.

— Synopsis of the recent and Tertiary Psammobiidae of North America.

Proc. Acad. Nat. Sci. Phila. for 1898, Apr. 5, 1898, pp. 57-62.

A synopsis of the species, with a revision of their generic and specific synonymy. The section *Grammatomya* with *Psammobia squamosa* as the type; *Nuttallia* with *Sanguinolaria nuttallii* as the type; and *Garum* with *Psammobia flosa* Conrad as an example are new. The name of *P. californica* (*rubroradiata* Cpr.) is restored, and the *P. edentula*, described as a fossil *Siliquaria* by Gabb, is placed in its proper genus, and noted as occurring in the recent fauna of San Pedro, Cal.

— The future of the Yukon gold fields.

Nat. Geograph. Magazine, IX, No. 4, Apr., 1898, pp. 117-120.

A discussion of the conditions of fuel and food supply in the Yukon region.

— A Yukon pioneer, Mike Lebarge.

Nat. Geograph. Magazine, IX, No. 4, Apr., 1898, pp. 137-139.

A biographical sketch, with portrait, of a

DALI, WILLIAM HEALEY—Continued.

member of the original expedition for scientific research in Alaska, sent out under Robert Kennicott by the Smithsonian Institution in 1865, with the cooperation of the Western Union Telegraph expedition.

— A new subgenus of *Coralliophaga*.

Nautilus, XI, No. 12, Apr., 1898, p. 135.

Oryctomya, n. subg., with the type *O. clai-bornensis*, n. sp., from the Eocene sands of Claiborne, Ala. The types are in the National Museum.

— Contribution to the Tertiary fauna of Florida, with special reference to the siliceous beds of Tampa and the Pliocene beds of the Caloosahatchie River; including in many cases a complete revision of the generic groups treated of and their American Tertiary species. Part IV: (I) Prionodesmacea, *Nucula* to *Julia*; (II) Teleodesmacea, *Teredo* to *Ervilia*.

Trans. Wagner Free Inst. Sci., III, pt. IV, April-June, 1898, pp. I-VIII, 571-969, with 13 pls.

This memoir forms part IV of the discussion of the Tertiary mollusk-fauna of the Gulf States and adjacent region. Nearly all the types of new species are in the National Museum. The sum of all the new names amounts to 3 genera, 1 subgenus, 8 sections, about 22 new names for species bearing names which are no longer tenable, 162 new species, and 27 varieties. These names are given in the index to the work.

— On the genus *Halia* of Risso.

Proc. Acad. Nat. Sci. Phila., May 4, 1898, pp. 190-192.

This paper discusses the systematic position of *Halia* and concludes that it is a degenerate type allied to *Aurinia* and belonging in the family Scaphellidae of the Volutacea.

— On a new species of *Fusus* from California.

Nautilus, XII, No. 1, May, 1898, pp. 4, 5.

Fusus roperi from San Pedro, Cal., is described as new and taken as the type of a new section, *Roperia*.

DIMMOCK, GEORGE, and ASHMEAD, WILLIAM H. Notes on parasitic Hymenoptera, with descriptions of some new species.

Proc. Ent. Soc. Wash., IV, No. 2, Feb., 1898, pp. 148-171.

This paper is divided into two parts, the first being by Dr. Dimmock, who records the hosts of 70 distinct parasites bred by him, 25 of which proved to be new. These are described by Mr. Ashmead in part 2. Mr.

DIMMOCK, GEORGE, and ASHMEAD, WILLIAM H.—Continued.

Ashmead also gives a table of the genera of the *Microgasterinae*, in which he characterizes 6 new genera.

EASTMAN, C. R. *Tamiobatis retustus*; a new form of fossil Skate.

Am. Journ. Sci., IV, No. 20, Aug., 1897, pp. 85-90, pl. and fig.

ELLIOT, DANIEL G. A list of a collection of shells from the Gulf of Aden.

Pub. Field Columbian Museum, No. 26, Zool. series 1, No. 9, Chicago, Mar., 1898, pp. 187-189.

The specimens enumerated in this list were labeled in the Division of Mollusks. A series was donated to the National Museum.

EVERMANN, BARTON WARREN, and KENDALL, WILLIAM C. Descriptions of new or little-known genera and species of fishes from the United States.

Bull. U. S. Fish Com., 1897 (Feb. 9, 1898), pp. 125-133.

In this paper are described 3 new genera and 8 new species of fishes collected in Florida, Louisiana, and Mississippi.

EVERMANN, BARTON WARREN, and MEEK, SETH EUGENE. A report upon salmon investigations in the Columbia River Basin, and elsewhere on the Pacific coast, in 1896.

Bull. U. S. Fish Com., 1897 (Jan. 6, 1898), pp. 15-84.

This paper lists 40 species, 5 of which are described as new.

FAXON, WALTER. Observations on the Astacidae in the U. S. National Museum and in the Museum of Comparative Zoology, with descriptions of new species.

Proc. U. S. Nat. Mus., XX, No. 1136, Feb. 17, 1898, pp. 643-694, pls. LXII-LXX.

The first part of the paper embodies the results of an examination of the material which has accumulated in the U. S. National Museum and the Museum of Comparative Zoology since the publication of the author's "Notes on North American Crayfishes" in 1890. The second part relates to the crayfishes of the Southern Hemisphere—the Parastacinae.

FEWKES, J. WALTER. *Tusayan kateinas*.

15th Ann. Rep. Bur. Am. Ethnol., 1897, pp. 245-313, pls. CIV-CXI, figs. 39-48.

An account of the masked dances at Wolpi, a Tusayan pueblo, and an attempt to explain them.

FRIERSON, LORRAINE S. *Unio (Lampsilis) amphichænus*, new species.

Nautilus, XI, Feb., 1898, pp. 110, 111, pl. 1.

Unio (Lampsilis) amphichænus Frierson.

Specimens of the type lot are in the National Museum collection. This specimen was collected in the Sabine River at Logansport, La.

GILBERT, CHARLES HENRY. The fishes of the Klamath River Basin.

Bull. U. S. Fish Com., 1897 (Jan. 6, 1898), pp. 1-13.

A list of 15 species, 6 of which are described as new.

GILBERT, CHARLES HENRY, and SCOFIELD, NORMAN BISHOP. Notes on a collection of fishes from the Colorado Basin in Arizona.

Proc. U. S. Nat. Mus., XX, No. 1131, Jan. 19, 1898, pp. 487-499, pls. XXXVI-XXXIX.

Of the 19 species listed, 3 are described as new.

GILL, THEODORE. Oceanic Ichthyology.

Natural Science, XI, July, 1897, p. 71.

A refutation of some animaldiversions on Goode and Bean's "Oceanic Ichthyology" in a review published in a previous number of *Natural Science* (x, pp. 338-340).

— Edward Drinker Cope, naturalist. A chapter in the history of science.

Science (New series), VI, Aug. 13, 1897, pp. 225-243.

This biographical sketch appeared also in the *Scientific American Supplement*, the *American Naturalist*, and the *Proceedings of the American Association for the Advancement of Science*.

— On the relationships of the Nematognaths.

Science (New series), VI, Aug. 13, 1897, p. 434.

— Amphibia or Batrachia.

Science (New series), VI, Sept. 17, 1897, pp. 446, 447.

It is maintained that the Linnæan name Amphibia should be used as the name of the class, because it was first used as a class name and also first restricted to the class.

— The Agonoid genus *Percis* of Scopoli.

Science (New series), VI, Dec. 24, 1897, p. 958.

The name *Percis*, given by Scopoli in 1777, should supersede the name *Hippocephalus*, generally used but not published until 1839.

— The distinctive characters of the Molinæ and Ranzaniinæ.

Science (New series), VI, Dec. 24, 1897, p. 966. The Molinæ have the skeleton mostly carti-

GILL, THEODORE—Continued.

laginous and the dorsal and anal fins invested in the common skin, while the Ranzaniinæ have the skeleton "subosseous" and the rays distinct.

— The Crustacean genus *Scyllarides*.

Science (New series), VII, Jan. 21, 1898, pp. 98, 99.

It is shown "that the only species of *Scyllarus* known to Fabricius in 1775, when he first made known that genus, was *S. arctus*—the *Cancer arctus* of Linnaeus. That, being the only species, is necessarily the type, and therefore the name *Scyllarus* must be retained for it." For the *Scyllarus* of Dana and modern authors the new name *Scyllarides* is proposed.

— Huxley and his work.¹

Rep. Smithsonian Inst., 1895 (1896), pp. 759-780.

A memorial address given on Jan. 14, 1896, before the scientific societies of Washington.

Reprinted, with additions, from *Science* (New series), III, No. 60, Feb. 21, 1896.

GILL, THEODORE, and TOWNSEND, CHARLES H. Diagnoses of new species of fishes found in Bering Sea.

Proc. Biol. Soc. Wash., XI, Sept. 17, 1897, pp. 231-234.

Description of 14 new species and 1 new genus of fishes obtained by Mr. Townsend as naturalist of the U. S. Fish Commission steamer in 1895. The new species described are *Raia rosispinis*, *Raia obtusa*, *Raia interrupta*, *Macdonaldia alta*, *Macdonaldia longa*, *Ericara salmonca*, *Lycodes digitatus*, *Lycodes concolor*, *Macrurus lepturus*, *M. dorsalis*, *M. firmisquamis*, *M. magnus*, *M. suborbitalis*, *Hippoglossoides robustus*. The new genus described is *Ericara* of Alepocephalidæ.

GILLETTE, CLARENCE P. American Leaf-hoppers of the subfamily Typhlocybinae.

Proc. U. S. Nat. Mus., XX, No. 1138, April 20, 1898, pp. 709-773, figs. 1-149.

GODMAN, F. D.

(See under OSBERT SALVIN.)

GOODE, G. BROWN. Report upon the condition and progress of the U. S. National Museum during the year ending June 30, 1895.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 1-308.

GORE, J. HOWARD.

(See under THOMAS WILSON.)

GRINNELL, JOSEPH. Description of a new Towhee, from California.

¹Omitted from the Bibliography in the last Annual Report.

GRINNELL, JOSEPH—Continued.

Auk, XIV, No. 3, July, 1897, pp. 294-296.

Pipilo clementæ, from San Clemente Island, is described as new.

— New race of *Spinus tristis* from the Pacific coast.

Auk, XIV, No. 4, Oct., 1897, pp. 397-399.

Spinus tristis salicamans is described as new.

— Summer birds of Sitka, Alaska.

Auk, xv, No. 2, April, 1898, pp. 122-131.

An annotated list of 66 species found by the author in the vicinity of Sitka, Alaska.

HANSEN, H. J. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Commission steamer *Albatross* during 1891, Lieut. Commander Z. L. Tanner, U. S. Navy, commanding. XXII.—The Isopoda.

Bull. Mus. Comp. Zool. Harvard College, xxxi, No. 5, Dec., 1897, pp. 95-129, with 6 plates and chart.

The collection contains 15 species. Fourteen of these are marine species and are new to science. The other, a land species, is well known. Of the 14 marine species, 8 are free-living and 1 is parasitic on fishes. These 9 species belong to known genera. The remaining 5 species are peculiar forms of the subfamily Bopyrina, and occur in the branchial cavities of deep-sea decapod crustaceans.

The chart shows the route of the *Albatross*.

HASSALL, ALBERT.

(See under C. W. STILES.)

HOFFMAN, WALTER JAMES. The graphic art of the Eskimos. (Based upon collections in the National Museum.)

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 739-968, pls. 1-82, figs. 1-154.

HOUGH, WALTER. The origin and range of the Eskimo lamp.

Am. Anthropologist, xi, April, 1898, No. 4, pp. 116-122.

This discussion is germane to a monograph on Eskimo lamps, which will be published later. The author points out that the Eskimo could not live without lamps, which they have possessed from time immemorial. The fact that their lamps originated from beach stones with natural concavities, and that they range from this simple form to highly finished examples of stone and pottery, shows that the

HOUGH, WALTER—Continued.

size and form of the lamps bear so distinct a relation to the isothermal lines and zone of winter darkness, that it is possible by comparison to assign the geographical position of any specimen.

— Environmental interrelations in Arizona.

Am. Anthropologist, xi, May, 1898, No. 5, pp. 133-155.

A study of the effect of environment upon the Moki and upon the plants of the region, together with their mutual interrelations. The paper contains a list of plants formerly printed, but amplified by the results of the field work of 1897.

HOWARD, LELAND O. The desirability of an inspection system against foreign insects.

Proceedings National Convention for the Suppression of Insect Pests, Washington, U. S. Dept. Agric., Aug., 1897, pp. 11, 12.

An estimate of the comparative number of imported injurious insects and a consideration of the possibilities of a quarantine and inspection system which should keep out future importations of this class.

Reviewed in the *Hawaiian Planter's Journal* for January, 1898.

— The spread of land species by the agency of man with especial reference to insects.

Science (New series), vi, No. 141, Sept. 10, 1897, pp. 382-398.

An address delivered before the American Association for the Advancement of Science, at its Detroit meeting, 1897.

The methods of the spread of land species by the agency of man are described, and the most frequent methods of such spread are noted, with a general consideration of the biological principles involved.

The article was reprinted in the *Scientific American Supplement*, Nos. 1134, 1135, and 1136, Sept. 25, Oct. 2, and Oct. 9, 1897.

Author's separates published September, 1897.

— Additional observations on the parasites of *Orgyia leucostigma*.

Bull. Div. Ent., U. S. Dept. Agric., No. 9 (New series), Oct., 1897, pp. 15-17.

An account of the rearing of parasites from the host-insect mentioned, showing a greater preponderance of dipterous parasites. Comparative tables of mortality ratios are given. This account is supplementary to that which appeared in Bulletin No. 5, Technical series.

— Temperature experiments as affecting received ideas on the hibernation of injurious insects.

HOWARD, LELAND O.—Continued.

Bull. Div. Ent., U. S. Dept. Agric., No. 9
(New series), Oct., 1897, pp. 18, 19.

An account of cold storage experiments which indicate that a consistent low temperature is much more favorable for successful hibernation than alternating high and low temperatures.

— A useful American scale insect.

Bull. Div. Ent., U. S. Dept. Agric., No. 9
(New series), Oct., 1897, pp. 38-40.

A review of the commercial uses of scale insects with an account of *Cerococcus quercus*, its chemical composition, abundance, and commercial possibilities.

— Mosquitoes and fleas.

Circ. Div. Ent., U. S. Dept. Agric., No. 13
(New series), Dec. 1, 1897, pp. 1-4. Revised edition.

An account of the life histories and remedies to be used against mosquitoes and fleas.

— Report of the Entomologist for 1897.

Rep. Secy. Agric., 1897, pp. 111-116.

A review of the work of the Division of Entomology of the U. S. Department of Agriculture for the fiscal year ending June 30, 1897. Author's extras, Dec. 20, 1897.

— The Mexican Cotton-boll Weevil in 1897.

Circ. Div. Ent., U. S. Dept. Agric., No. 27
(New series), Jan. 5, 1898, 7 pp.

A review of the spread of *Anthonomus grandis* in Texas during 1897, and of the investigation of the subject in the field.

— The Box-elder Plant Bug, *Leptocoris trivittatus* Say.

Circ. Div. Ent., U. S. Dept. Agric., No. 28
(New series), Jan. 12, 1898, 3 pp., 1 fig.

An account of the life history and remedies to be used against *Leptocoris trivittatus*, together with some account of its geographical distribution.

— The Gipsy Moth in America: a summary account of the introduction and spread of *Porthetria dispar* in Massachusetts, and of the effort made by the State to repress and exterminate it.

Bull. Div. Ent., U. S. Dept. Agric., No. 11
(New series), Jan. 11, 1898, 39 pp., 8 figs.

— A new parasite of the Harlequin Cabbage Bug.

Canadian Entomologist, xxx, No. 1 (Jan., 1898), pp. 17, 18.

Describes *Encyrtus johnsoni*, new species, with remarks on *Trissolcus murgantiæ* Ashm.

— On some parasites of the Coccidæ, with descriptions of two new genera of Aphelininæ.

HOWARD, LELAND O.—Continued.

Proc. Ent. Soc. Wash., iv, No. 2, pp. 133-139, 3 figs.

Remarks on the geographical distribution of some common coccid parasites, with descriptions of the male of *Arrhenophagus*; *Archenomus*, new genus; *bicolor*, new species; *Azotus*, new genus; *marchali*, new species.

Author's extras published Feb. 11, 1898.

— (Review of) Les Cécidomyies des céréales et leurs parasites, by Dr. Paul Marchal.

Science (New series), vii, Feb. 18, 1898, pp. 246-248.

— The San Jose Scale in 1896-97.

Bull. Div. Ent., U. S. Dept. Agric., No. 12
(New series), Mar. 25, 1898, pp. 1-31, fig. 1.

A general account of *Aspidiotus perniciosus* supplementary to that published in Bulletin No. 3 (New series), Division of Entomology.

— The Fig-eater or Green June Beetle.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 20-26, fig. 1.

An account of the life history of *Allorhina nitida* L., with some consideration of the remedies to be used against it.

— Further notes on the House Fly.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 63-65.

An account of experiments with air-slaked lime, land-plaster, gas-lime, chloride of lime, and kerosene against *Musca domestica*, with some observations on the development of this insect.

— General notes.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 87-97, 1 fig.

A peculiar injury to apples; another lead-boring insect; *Icerya purchasi* in Portugal and the Azores; injury by the Western flea-beetle; windrow remedy for blister beetles; white grubs of *Allorhina nitida* invading a cellar; damage by *Lioderma uhleri*; food plants of *Dysdercus suturellus*; collecting locust eggs in Morocco; poisoning grasshoppers in Natal; collecting grasshoppers in New Hampshire.

— Notes from correspondents.

Bull. Div. Ent., U. S. Dept. Agric., No. 10
(New series), Mar. 26, 1898, pp. 97-99.

— Recent laws against injurious insects in North America

Bull. Div. Ent., U. S. Dept. Agric., No. 13
(New series), Mar. 31, 1898, 68 pp.

A compilation of the recent laws relating to injurious insects in the United States and British America, together with the laws relative to foul brood.

HOWARD, LELAND O.—Continued.

— A new egg parasite of the periodical Cicada.

Canadian Entomologist, xxx, No. 4, April, 1898, pp. 102, 103.

Description of *Lathromeris cicadæ*, new species.

— On the entomological results of the exploration of the British West Indian Islands by the British Association for the Advancement of Science.

28th Ann. Rep. Ent. Soc. Ontario, 1897 (April, 1898), pp. 62-64.

A brief history of the exploration in question, with a summary of the material reported upon and of the comments of the different authors on geographical distribution, together with a plea for similar work in little known parts of the United States.

— Insect life underground.

Nature and Art, Chicago, I, No. 4, May, 1898, pp. 155-159, 1 pl.

An account of the insects which live beneath the surface of the ground, with a popular consideration of the value of their work in producing soil changes.

— Work of the Division of Entomology.

Yearbook U. S. Dept. Agric., 1897 (May 31, 1898), pp. 84-89.

A popular account of the work which is carried on in the Division of Entomology, U. S. Department of Agriculture.

Author's extras of this paper were published May 17, 1898.

— Danger of importing insect pests.

Yearbook U. S. Dept. Agric., 1897 (May 31, 1898), pp. 529-552, figs. 25-43.

A general consideration of the subject, including specific mention of Europe as a source of danger; injurious insects from the tropics; insects from the Pacific regions; insects from other parts of the world; methods of importation of insects; the Morelos orange fruit worm; injurious Australian insects; the Bermuda peach maggot; a few European destructive insects; some dangerous Japanese insects; national quarantine and inspection.

Author's extras of this paper were issued June 6, 1898.

KENDALL, WILLIAM C.

(See under B. W. EVERMANN.)

KNOWLTON, FRANK HALL. Sensitive-ness of the Sundew.

Plant World, I, Oct., 1897, pp. 7, 8.

— Note on *Artocarpus*.

Plant World, I, Oct., 1897, p. 12.

KNOWLTON, FRANK HALL.—Continued.

— A remarkable lily.

Plant World, I, Oct., 1897, p. 16.

— Some early American botanists.—Amos Eaton.

Plant World, I, Nov., 1897, pp. 17, 18. Portrait.

— *Gelsemium* and its habits.

Merck's Report, VI, Dec., 1897, p. 723.

— National forests and their preservation.

Plant World, I, Dec., 1897, pp. 40, 41.

— The standing fossil forests of the Yellowstone National Park.

Plant World, I, Jan., 1898, pp. 53-55, with plate.

— The Elephant Tree.

Plant World, I, May, 1898, pp. 113-116, pl. v.

— [Note on taking up of copper by pine trees.]

Plant World, I, June, 1898, p. 142.

LINELL, MARTIN L. New species of Coleoptera of the family Chrysomelidae, with a short review of the tribe Chlamydini.

Proc. U. S. Nat. Mus., xx, No. 1130, Jan. 5, 1898, pp. 473-485.

LINTON, EDWIN. Notes on the larval cestode parasites of fishes.

Proc. U. S. Nat. Mus., XIX, No. 1123, Oct. 1, 1897, pp. 787-824, pls. LXI-LXVIII.

— Notes on cestode parasites of fishes.

Proc. U. S. Nat. Mus., xx, No. 1125, Dec. 24, 1897, pp. 423-456, pls. XXVII-XXXIV.

— Notes on trematode parasites of fishes.

Proc. U. S. Nat. Mus., xx, No. 1133, Jan. 20, 1898, pp. 507-548, pls. XL-XLIV.

LUCAS, FREDERIC A. The tongues of birds.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 1001-1019, pls. 1, 2, figs. 1-13.

A somewhat popular account of the structure of the tongues of birds and their modifications according to the food of the various groups.

— A right royal robe.

St. Nicholas, Sept., 1897, pp. 914, 915, 1 fig. A description of the Hawaiian feather cloak in the U. S. National Museum.

LUCAS, FREDERIC A.—Continued.

— The Fur-seal investigation of 1897.

Science (New series), vi, No. 145, Oct. 15, 1897, pp. 508, 569.

A résumé of the work of the Fur-seal Commission of 1897.

— Report of death of pups from *Uncinari*.

Observations on the Fur-seals of the Pribilof Islands. Second Preliminary Report, by David Starr Jordan, 1897, (Appendix 1), pp. 32-34.

Shows that large numbers of young Fur-seals die from the attacks of a parasitic worm of the genus *Uncinari*; describes the symptoms and duration of the plague, and shows that deaths from this cause are not to be confused with deaths from starvation.

MCGREGOR, R. C. Note on *Speotyto cunicularia obscura* Stephens.

Auk, xv, No. 2, April, 1898, p. 187.

Measurements and comparisons made by the writer tend to show that *Speotyto cunicularia obscura* Stephens is merely a small individual of the ordinary Burrowing Owl of the west.

MASON, OTIS TUFTON. Geographical distribution of the musical bow.

Am. Anthropologist, x, Nov., 1897, No. 11, pp. 377-380.

This paper describes the musical bow found among African and American tribes. The author expresses his belief that stringed instruments were not known to any of the aborigines of the Western Hemisphere before Columbus.

MEARNS, EDGAR A. Descriptions of six new mammals from North America.

Proc. U. S. Nat. Mus., xix, No. 1121, July 17, 1897, pp. 719-724.

— Preliminary diagnoses of new mammals of the genera *Lynx*, *Urocyon*, *Spilogale*, and *Mephitis*, from the Mexican boundary line.

Proc. U. S. Nat. Mus., xx, No. 1126, Dec. 24, 1897, pp. 457-461.

— Preliminary diagnoses of new mammals of the genera *Mephitis*, *Dorcacanthus*, and *Dicotyles*, from the Mexican border of the United States.

Proc. U. S. Nat. Mus., xx, No. 1129, Dec. 24, 1897, pp. 467-471.

— Preliminary diagnoses of new mammals of the genera *Sciurus*, *Castor*, *Neotoma*, and *Sigmodon*, from the Mexican border of the United States.

Proc. U. S. Nat. Mus., xx, No. 1132, Jan. 17, 1898, pp. 501-505.

MEEK, SETH EUGENE.

(See under B. W. EVERMANN.)

MERRIAM, C. HART. *Syrnium occidentale caurinum*, a new owl from the Puget Sound region.

Auk, xv, No. 1, Jan., 1898, pp. 39, 40.

A new owl from Mount Vernon, Wash., is here described.

MERRILL, GEORGE PERKINS. Notes on the geology and natural history of the peninsula of Lower California.

Rep. Smithsonian Inst., (U. S. Nat. Mus.), 1895 (1897), pp. 969-994, pls. 1-10.

MILLER, GERRIT S., jr. Revision of the North American bats of the family *Vespertilionidae*.

North Am. Fauna, No. 13, Oct. 16, 1897, pp. 1-140, pls. I-III, figs. 1-40.

A detailed synopsis of the *Vespertilionidae* known to occur north of Panama and in the West Indies. Special attention is given to nomenclature, keys, and descriptions. Nine new forms are recognized among the 46 forms known to inhabit the region.

— Description of a new rodent of the genus *Idiurus*.

Proc. Biol. Soc. Wash., xii, Mar. 24, 1898, pp. 73-76, figs. 15-19.

Idiurus macrotis, n. sp., is described.

— A new rabbit from Margarita Island, Venezuela.

Proc. Biol. Soc. Wash., xii, Apr. 30, 1898, pp. 97, 98.

Lepus margaritæ, n. sp., is described.

— A new chipmunk from northeastern China.

Proc. Acad. Nat. Sci. Phila., Aug. 1, 1898, pp. 348-350.

Eutamias senescens, sp. nov., is described.

— List of bats collected by Dr. W. L. Abbott in Siam.

Proc. Acad. Nat. Sci. Phila., July 25, 1898, pp. 316-325.

Cynopterus angulatus, n. sp., *Keriroula minuta*, n. sp., and *Emballonura peninsularis*, n. sp., are described.

MOORE, CHARLES. The Ontonagon copper boulder in the U. S. National Museum.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 1021-1030, pls. 1, 2.

NELSON, E. W. Descriptions of new birds from the Tres Marias Islands, western Mexico.

Proc. Biol. Soc. Wash., xii, Jan. 27, 1898, pp. 5-11.

Eleven species and subspecies from the Tres

NELSON, E. W.—Continued.

Marias Islands are described as new, viz: *Columba flavirostris madrensis*, *Leptotila capitalis*, *Buteo borealis fumosus*, *Polyborus cheriway pallidus*, *Trogon ambiguus goldmani*, *Nyctidromus albicollis insularis*, *Myiopagis placens minimus*, *Cardinalis cardinalis marie*, *Vireo hypochryscus sortidus*, *Melanotis caerulescens longirostris*, and *Thryothorus lawrencii magdalene*.

— Descriptions of new birds from Mexico, with a revision of the genus *Dactylortyx*.

Proc. Biol. Soc. Wash., XII, Mar. 24, 1898, pp. 57-68.

Heleodytes brunneicapillus obscurus, *Vireo nanus*, *Progne sinaloe*, *Phoenicotheraps rubicoides roscus*, *Amphispiza bilineata grisea*, *Guiraca chiapensis*, *Grallaria ochraceiventris*, *Amazilia cinnamomea saturata*, *Dactylortyx chiapensis*, and *D. devius* are described as new. Four forms of *Dactylortyx* are recognized, *D. thoracicus*, *D. thoracicus lineolatus*, and the two new species above described.

— Notes on the wild fowl and game animals of Alaska.

Nat. Geograph. Magazine, IX, No. 4, April, 1898, pp. 121-132, 6 figs.

A popular account of some of the game birds and mammals of Alaska.

— Notes on certain species of Mexican birds.

Auk, XV, No. 2, April, 1898, pp. 155-161.

These notes treat of the geographical distribution, nomenclature, and relationships of various species of Mexican birds.

OBERHOLSER, HARRY C. Description of a new *Empidonax*, with notes on *Empidonax difficilis*.

Auk, XIV, No. 3, July, 1897, pp. 300-303.

Empidonax insulicola is described from Santa Rosa Island, Cal., and its relationship to *E. cineritius* is explained.

— Critical notes on the genus *Auriparus*.

Auk, XIV, No. 4, Oct., 1897, pp. 390-394.

Auriparus flaviceps lamprocephalus is described in this paper as new.

— Description of a new *Amazilia*.

Auk, XV, No. 1, Jan., 1898, pp. 32-36.

Amazilia cerviniventris chalconota, from Brownsville, Tex., is described as new, and its relationships pointed out.

— The birds of Liberia.

Liberia, Bull. No. 12, American Colonization Society, Washington, D. C., Feb., 1898, pp. 16-25.

A popular sketch of the birds of Liberia.

PALMER, WILLIAM. The Sitkan Kinglet.

Auk, XIV, No. 4, Oct., 1897, pp. 399-401.

Regulus calendula grinnelli is here described as new.

— An addition to North American Petrels.

Auk, XIV, No. 3, July, 1897, pp. 297-299.

Oceanodroma cryptoleucura is recorded from North America, based on two specimens found in Washington City after the great storm of Aug. 26, 27, 1893. This species and *O. leucorhoa* are described, and the differences between them pointed out.

PILSBRY, HENRY A. Manual of Conchology. Parts 66 and 67.—Dentaliidae.

Man. Conch. Struct. and Syst., Pt. 66, pp. 81-144, pls. 10-26; Pt. 67, pp. 145-224, pls. 27-37.

The entire collection of Dentaliidae in the National Museum was studied by Professor Pilsbry, and the present monograph is in part based on this material. A number of the types of new species, etc., are contained in the Museum.

POLLARD, CHARLES LOUIS. Two new violets.

Bull. Torrey Botan. Club, XXIV, Aug. 29, 1897, p. 404.

This paper describes *V. flavovirens*, from Idaho, and *V. porteriana*, from Pennsylvania, with a figure of the last named. The types of both species are in the U. S. National Herbarium.

— The genus *Oxytria* of Rafinesque.

Bull. Torrey Botan. Club, XXIV, Aug. 29, 1897, p. 405.

This paper revises the nomenclature of the genus *Oxytria*, which replaces *Schoenolirion* of Durand. The study is based on Museum material.

— The families of flowering plants.

Plant World, I, Oct., 1897, to Mar., 1898, pp. 5, 19, 37, 56, 71, 88.

A series of popular descriptive articles on the characters distinguishing the flowering plant families. The series thus far includes only the monocotyledons.

— Note on *Dioscorea batatas* in cultivation.

Plant World, I, Dec., 1897, p. 48.

— Note on the Egg Plant as a perennial in the far south.

Plant World, I, June, 1898, p. 143.

— Note on a hermaphrodite willow (*Salix bebbiana* Sargent).

Plant World, I, June, 1898, p. 144.

RATHBUN, MARY J. List of the decapod crustacea of Jamaica.

Ann. Inst. Jamaica, I, No. 1, Sept., 1897, pp. 1-46.

The crustacea in the collection of Mr. P. W. Jarvis, Kingston, and in the museum of the Institute of Jamaica, form the basis of this list, which includes also the results of explorations by the Johns Hopkins University and by the U. S. Fish Commission.

— Descriptions of three new species of fresh-water crabs of the genus *Potamon*.

Proc. Biol. Soc. Wash., XII, Jan. 27, 1898, pp. 27-30, pls. 1, II.

One species is a typical *Potamon* from the Malayan Peninsula; two are members of the subgenus *Geothelphusa* from the Loo Choo Islands and from West Africa.

— The brachyura of the biological expedition to the Florida Keys and the Bahamas in 1898.

Bull. Laboratories Nat. Hist. State Univ. Iowa, IV, June, 1898, pp. 250-294, pls. I-IX.

Descriptions of eleven new species of crabs in the National Museum.

RICHARDSON, HARRIET. Description of a new crustacean of the genus *Sphæroma*, from a warm spring in New Mexico.

Proc. U. S. Nat. Mus., XX, No. 1128, Dec. 24, 1897, p. 465, 466.

This crustacean, *Sphæroma thermophilum*, was taken from a warm spring near Socorro, New Mexico, by Mr. T. D. A. Cockerell. It is contrasted with *S. dugesi* Dollfus, a Mexican species, and the only other *Sphæroma* inhabiting fresh water.

An advance edition of this paper was published Feb. 6, 1897.

— Description of a new parasitic isopod of the genus *Æga* from the southern coast of the United States.

Proc. Biol. Soc. Wash., XII, Mar. 24, 1898, pp. 39, 40, figs. 1, 2.

The specimens were obtained by the U. S. Fish Commission steamer *Albatross*—one off Little Bahama Bank, and the other in the Gulf of Mexico.

— Description of four new species of *Rocinela*, with a synopsis of the genus.

Proc. Am. Philosoph. Soc., XXXVII, No. 157, June, 1898, pp. 8-17, figs. 1-10.

Nineteen species are included in the genus *Rocinela*. A chronological list and a synopsis of the species are given. The new species are all from the dredgings of the *Albatross*.

RICHMOND, CHARLES W. (Review of) Notes on birds observed in Yucatan, by Frank M. Chapman.

Auk, XIV, No. 3, July, 1897, p. 333.

— The Western Field Sparrow, *Spizella pusilla arenacea* Chadbourne.

Auk, XIV, No. 4, Oct., 1897, pp. 345-347, pl. III.

The paper presents an account of this subspecies.

— The Cayenne Swift, *Panyptila cayensis* (Gmelin).

Auk, XV, No. 1, Jan., 1898, pp. 7-10, pl. I.

In this paper is presented an account of the distribution, habits, and nesting of this species.

RIDGWAY, ROBERT. Description of the nest and eggs of Bachman's Warbler.

Auk, XIV, No. 3, July, 1897, pp. 309, 310.

The nest and eggs found by Mr. Otto Widmann are here described.

— An earlier name for *Ammodramus lecontei*.

Auk, XIV, No. 3, 1897, p. 320.

Fringilla caudacuta of Latham is found to apply to Leconte's Sparrow, the present name of which does not change, since *Fringilla caudacuta* of Latham is antedated by *Oriolus caudacutus* of Gmelin.

— On the status of *Lanius robustus* Baird as a North American bird.

Auk, XIV, No. 3, July, 1897, p. 323.

This supposed species is considered to be an "aberrant" specimen of *Lanius algeriensis*, and consequently not a North American bird.

— (Review of) Bird Life, by Frank M. Chapman.

Auk, XIV, No. 3, July, 1897, pp. 336-338.

— Descriptions of supposed new genera, species, and subspecies of American birds. I—Fringillidæ.

Auk, XV, No. 3, July, 1898, pp. 223-230.

Fourteen genera and eight species and subspecies are described as new, viz: *Melanospiza*, *Brachyospiza*, *Myospiza*, *Plagiospiza*, *Rhynchospiza*, *Pselliophorus*, *Lysurus*, *Serinopsis*, *Heterospingus*, *Mitrospingus*, *Rhodothraupis*, *Hemithraupis*, *Stelgidostomus*, *Aimophila ruficeps sororia*, *Aimophila sartorii*, *Atlapetes pileatus dilutus*, *Arremonops venezuelensis*, *Arremonops richmondi*, *Cyanocampa concreta cyaniceps*, *Amphispiza biniata deserticola*, *Amphispiza belli clementæ*. Author's extras issued May 13, 1897.

ROSE, JOSEPH NELSON. Studies of Mexican and Central American plants.

Contrib. U. S. Nat. Herbarium, v, No. 3, Aug. 27, 1897, pp. 109-144, pls. 1-IV.

This paper is a technical study of some Mexican and Central American plants, including the revision of some difficult genera, and the description of more than 50 species new to science.

— *Agave washingtonensis* and other Agaves.

Ninth Ann. Rep. Missouri Bot. Garden, Apr. 20, 1898, pp. 121-126, pls. 29-31.

A short account of four Agaves which flowered in Washington during the year 1897, one of which had not been previously described.

— *Loeselia cordifolia*, n. sp.

Hooker's Icon. Plant., xxvi, Pt. 3, 1898, pl. 2551.

A new species from Mexico which Mr. Rose describes in connection with Mr. W. Botting Hemsley, of Kew, England.

SALVIN, OSBERT, and GODMAN, F. D. An account of the owls of the Central American region.

Biologia Centrali-Americana, Aves, III, Nov., 1897, pp. 1-40, pls. LXI, LXII.

This account embraces 34 species, of which *Syrnium fulvescens* and *Seops trihopis* are figured.

SCHUCHERT, CHARLES. A synopsis of American fossil Brachiopoda, including bibliography and synonymy.

Bull. U. S. Geol. Surv., No. 87, 1897, pp. 1-464.

The contents of this volume are: Geological development and geographical distribution of American fossil Brachiopoda; brachiopod terminology, applied to fossil forms; biological development of the Brachiopoda; morphology of the brachia, by Charles E. Beecher; classification of the Brachiopoda; index and bibliography of American fossil Brachiopoda.

— (See also under DAVID WHITE.)

SCOFIELD, NORMAN BISHOP.

(See under CHARLES HENRY GILBERT.)

SCUDDER, SAMUEL HUBBARD. Revision of the Orthopteran group Melanopli (Acridiidae), with special reference to North American forms.

Proc. U. S. Nat. Mus., xx, No. 1124, Dec. 28, 1897, pp. 1-421, pls. 1-XXVI.

SHUFELDT, R. W. Taxidermical methods in the Leyden Museum.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 1031-1038, pls. 1-6.

SMITH, HUGH M. The fishes found in the vicinity of Woods Hole.

Bull. U. S. Fish Com., 1897 (Jan. 6, 1898), pp. 85-111.

The fishes listed in this paper represent 88 families, 160 genera, and 209 species, and were collected by the U. S. Fish Commission.

STANTON, TIMOTHY WILLIAM. A comparative study of the Lower Cretaceous formations and faunas of the United States.

Journ. Geol., v, Sept.-Oct., 1897, pp. 579-624.

A portion of the paleontological material treated of in this general discussion is in the collection of the National Museum.

— Supplement to the annotated catalogue of the published writings of Charles Abiathar White, 1886-1897.

Proc. U. S. Nat. Mus., xx, No. 1135, Feb. 12, 1898, pp. 627-642.

STEARNS, ROBERT E. C. Quarter-decks and Jingles.

Nautilus, xi, No. 4, Aug., 1897, pp. 38-40.

"Quarter-decks" and "Jingles" are the names locally applied to the shells of certain marine mollusks properly known as *Crepidula fornicata* Linné, and *Anomia simplex* Orbigny. Large quantities (thousands of bushels) of these shells are taken by dredging in the neighborhood of Greenport, N. Y., and sold to the oystermen of that general region to be used as "catchment objects" or material for forming spawning beds for *Ostrea virginica*.

— *Modiola plicatula* Lamarek, an extinct locality.

Nautilus, xi, No. 9, Jan., 1898, pp. 102, 103.

That portion of the city of Boston west of the Public Garden and extending to Roxbury, known as the Back-bay section, was fifty years ago simply a salt marsh, with occasional patches of mud flats. In the greater part of this area the well-known mussel, *Modiola plicatula* Lamarek, was abundant, and millions must have been destroyed when the marshes were filled up.

STEJNEGER, LEONHARD. Stjernen.

Bergens Tidende, Jan. 21, 1898, p. 2.

A popular account of a Christmas custom on Bering Island.

— Ross's Gull, *Rhodostethia rosea*, on Bering Island.

Auk, xv, No. 2, Apr., 1898, p. 183.

This is the first record of the occurrence of this bird on Bering Island, and the first authentic record for Kamchatka.

STEJNEGER, LEONHARD—Continued.
— The rookeries of the Commander Islands.

Observations on the Fur-seals of the Pribilof Islands. Second Preliminary Report, by David Starr Jordan, 1897 (Appendix II), pp. 35-38.

Condensed from the full report.

— Report on the rookeries of the Commander Islands, season of 1897.

Doc. No. 1997, Treas. Dept. (Office of Secretary, Special Agents Division), pp. 1-17.

STILES, CHARLES WARDELL. The flukes and tapeworms of cattle, sheep, and swine, with special reference to the inspection of meats.

Bull. Bureau Animal Industry, U. S. Dept. Agric., No. 19, 1898, pp. 11-136, figs. 1-124.

The inspection of meats for animal parasites.

STILES, CHARLES WARDELL, and HASSELL, ALBERT. Notes on parasites 48.—An inventory of the genera and subgenera of the trematode family Fasciolidae.

Arch. d. Parasitologie, 1, pp. 81-99.

TASSIN, WIRT. The mineralogical collections in the U. S. National Museum.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 995-1000, pl. 1.

TOWNSEND, CHARLES H.
(See under THEODORE GILL.)

VERRILL, ADDISON E. A study of the family Pectinidae, with a revision of the genera and subgenera.

Trans. Conn. Acad. Sci., x, July, 1897, pp. 48-95, pls. XVI-XXI.

This paper comprises some of the preliminary studies upon which a later paper by Verrill and Bush in the Proceedings of the United States National Museum (Vol. XX, No. 1139) was based.

VERRILL, ADDISON E., and BUSH, KATHARINE J. Revision of the deep-water mollusks of the Atlantic Coast of North America, with descriptions of new genera and species. Part 1.—Bivalvia.

Proc. U. S. Nat. Mus., xx, No. 1139, June 16, 1898, pp. 775-901, pls. LXXI-XCVII.

The material upon which this paper is based forms a part of the collection of mollusks in the United States National Museum.

WALCOTT, CHARLES D. Cambrian Brachiopoda: Genera *Iphidea* and *Yorkia*, with descriptions of new species of each and of the genus *Acrothele*.

Proc. U. S. Nat. Mus., xix, No. 1120, Aug. 17, 1897, pp. 707-718, pls. LIX, LX.

WHITE, DAVID. *Omphalophloios*, a new Lepidodendroid type.

Bull. Geol. Soc. Am., ix, May, 1898, pp. 329-342, pls. 20-23.

WHITE, DAVID, and SCHUCHERT, CHARLES. Cretaceous series of the west coast of Greenland.

Bull. Geol. Soc. Am., ix, May, 1898, pp. 343-368, pls. 24-26.

WIDMANN, O. The summer home of Bachman's Warbler no longer unknown. A common breeder in the St. Francis River region of southeastern Missouri and northeastern Arkansas.

Auk, xiv, No. 3, July, 1897, pp. 305-309.

An account of the breeding habits, nests, and eggs of Bachman's Warbler, until now unknown.

— Investigation in the sand-pits of the Lalor Field, near Trenton, N. J.

Proc. Am. Assoc. Adv. Sci., XLVI, 1897, pp. 381-383.

WILSON, THOMAS. The antiquity of the red race in America.

Rep. Smithsonian Inst. (U. S. Nat. Mus.), 1895 (1897), pp. 1039-1045.

This article appeared in substantially the same form in *The Archaeologist*, also in *Popular Science News*, xxxi, No. 2, Feb., 1897, pp. 35, 36, and No. 3, Mar., 1897, p. 60.

— Arrow-points and spear-heads. Class A, beveled edges.

Am. Archaeologist, ii, part 6, June, 1898, pp. 141, 142.

A description of experiments made by the author regarding the rotary motion of beveled-edged specimens.

— Description and history of lace.

[*Special*] *Rep. No. 9, U. S. Dept. Agric. (Fiber Investigations), Appendix C, pp. 359-361.*

This article forms a part of "A descriptive catalogue of the useful fiber plants of the world, including the structural and economic classification of fibers," by Charles Richards Dodge.

WILSON, THOMAS, and GORE, J. HOWARD. Report of the Commissioners of

WILSON, THOMAS, and GORE, J. HOWARD—Continued.

the United States to the International Exposition held at Brussels in 1897.

Senate Doc., No. 152, 55th Cong., 2d sess., 80, pp. 1-43, pls. 1-9.

See pages 35-43 for description of Science Section.

WORCESTER, DEAN C., and BOURNS, FRANK S. Contributions to Philippine ornithology.

Proc. U. S. Nat. Mus., XX, No. 1134, Feb. 17, 1897, pp. 549-625, pls. LV-LXI.

Part I, "A list of the birds known to inhabit the Philippine and Palawan islands, showing their distribution within the limits of the two groups," by Dean C. Worcester, A. B., and Frank S. Bourns, M. D. Gives a tabulated statement of 535 species known to inhabit the Philippine and Palawan groups of islands, of which 69 species are restricted to the last-named group. The distribution of the species in the various islands is indicated, and species peculiar to the Philippines are designated by the use of italics.

Part II, entitled "Notes on the distribution of Philippine birds," by Dean C. Worcester, deals with the distribution of species in the Philippines; the zoological position of the Palawan group, and the relationships of species in the different islands; a discussion of Steeres's law of distribution; factors in the origin and distribution of the genera and species of resident Philippine land birds (illustrated by six plates), and the possibilities of future ornithological work in the Philippines.

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WRIGHT, BERLIN H. New unios.

Nautilus, XI, Aug., 1897, pp. 40-41; Sept., 1897, pp. 55, 56.

In the first article *Unio pinei*, n. sp., from an unnamed lake in the Withlacoochee River region of Hernando County, Fla., is described.

In the second article *Unio buxtoni* from small lakes in Marion County, Fla., is described, and *Unio suttoni* from near Lake Candler, Marion County, Fla.

— A new plicate unio.

Nautilus, XI, Dec., 1897, pp. 91, 92.

Unio walkeri, from Suwanee River, Madison County, Fla., is described.

— A new undulate unio from Alabama.

Nautilus, XI, Jan., 1898, pp. 101, 102.

Unio triumphans, from the Coosa River, St. Clair County, Ala., is described.

— Description of a new unio.

Nautilus, XI, Feb., 1898, pp. 111, 112.

Unio reclusus, from the Ocklocknee River, Leon County, Fla., is described.

— New varieties of Unionidæ.

Nautilus, XI, Mar., 1898, pp. 123, 124.

A description of a variety, *armathwaitensis*, of *Unio gibbosus*, from a branch of the South Fork of the Cumberland River at Armathwaite, Fentress County, Tenn.

— New Unionidæ.

Nautilus, XII, May, 1898, pp. 5, 6.

Unio strodeanus and a variety, *strigillatus*, of *U. cylindricus* are described.

The types of Mr. Berlin H. Wright's new unios were donated to the U. S. National Museum.

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APPENDIX V.

PAPERS PUBLISHED IN SEPARATE FORM DURING THE YEAR ENDING JUNE 30, 1898.

FROM THE REPORT FOR 1895.

- Report upon the condition and progress of the U. S. National Museum during the year ending June 30, 1895. By G. Brown Goode. pp. 1-308.
- The social organization and the secret societies of the Kwakiutl Indians. By Franz Boaz. pp. 311-738. pls. 1-51, figs. 1-215.
- The graphic art of the Eskimos. (Based upon the collections in the National Museum.) By Walter James Hoffman. pp. 739-968, pls. 1-82, figs. 1-154.
- Notes on the geology and natural history of the Peninsula of Lower California. By George P. Merrill. pp. 969-994, pls. 1-10.
- The mineralogical collections in the U. S. National Museum. By Wirt Tassin. pp. 995-1000, pl. 1.
- The tongues of birds. By Frederic A. Lucas. pp. 1001-1020, pls. 1, 2, figs. 1-13.
- The Ontonagon copper bowlder in the U. S. National Museum. By Charles Moore. pp. 1021-1030, pls. 1, 2.
- Taxidermical methods in the Leyden Museum, Holland. By R. W. Shufeldt. pp. 1031-1038, pls. 1-6.
- The antiquity of the red race in America. By Thomas Wilson. pp. 1039-1045.

FROM VOLUME 19, PROCEEDINGS OF THE U. S. NATIONAL MUSEUM.

- No. 1120. Cambrian Brachiopoda: Genera *Iphidea* and *Yorkia*, with descriptions of new species of each, and of the genus *Acrothele*. By Charles D. Walcott. pp. 707-718, pls. LIX, LX.
- No. 1121. Descriptions of six new mammals from North America. By Dr. Edgar A. Mearns, U. S. A. pp. 719-724.
- No. 1122. The food plants of scale insects (Coccidæ). By T. D. A. Cockerell. pp. 725-785.
- No. 1123. Notes on the larval cestode parasites of fishes. By Edwin Linton. pp. 787-824, pls. LXI-LXVIII.

FROM VOLUME 20, PROCEEDINGS OF THE U. S. NATIONAL MUSEUM.

- No. 1124. Revision of the Orthopteran group *Melanoplis* (Acridiidae), with special reference to North American forms. By Samuel Hubbard Scudder. pp. 1-421, pls. I-XXVI.
- No. 1125. Notes on cestode parasites of fishes. By Edwin Linton. pp. 423-456, pls. XXVII-XXXIV.
- No. 1126. Preliminary diagnoses of new mammals of the genera *Lynx*, *Urocyon*, *Spilogale* and *Mephitis*, from the Mexican boundary line. By Dr. Edgar A. Mearns, U. S. A. pp. 457-461.
- No. 1127. Description of a new blenny-like fish of the genus *Opisthocentrus*, collected in Vulcano Bay, Port Mororan, Japan, by Nicolai A. Grebnitski. By Tarleton H. Bean and Barton A. Bean. pp. 463, 464, pl. XXXV.

- No. 1128. Description of a new crustacean of the genus *Spharoma* from a warm spring in New Mexico. By Harriet Richardson. pp. 465, 466.
- No. 1129. Preliminary diagnoses of new mammals of the genera *Mephitis*, *Dorcelaphus*, and *Dicotyles*, from the Mexican border of the United States. By Dr. Edgar A. Mearns, U. S. A. pp. 467-471.
- No. 1130. New species of Coleoptera of the family Chrysomelidæ, with a short review of the tribe Chlamydini. By Martin L. Linell. pp. 473-485.
- No. 1131. Notes on a collection of fishes from the Colorado Basin in Arizona. By Charles Henry Gilbert and Norman Bishop Scofield. pp. 487-499, pls. XXXVI-XXXIX.
- No. 1132. Preliminary diagnoses of new mammals of the genera *Sciurus*, *Castor*, *Neotoma*, and *Sigmodon*, from the Mexican border of the United States. pp. 501-505.
- No. 1133. Notes on trematode parasites of fishes. By Edwin Linton. pp. 507-548, pls. XL-LIV.
- No. 1134. Contributions to Philippine ornithology. By Dean C. Worcester and Frank S. Bourns. pp. 549-625, pls. LV-LXI.
- No. 1135. Supplement to the Annotated Catalogue of the Published Writings of Charles Abiathar White, 1886-1897. By Timothy W. Stanton. pp. 627-642.
- No. 1136. Observations on the Astacidæ in the United States National Museum and in the Museum of Comparative Zoology, with descriptions of new species. By Walter Faxon. pp. 643-694, pls. LXII-LXX.
- No. 1137. A revision of tropical African Diplopoda of the family Strongylosomatidæ. By O. F. Cook. pp. 695-708.
- No. 1138. American Leaf-Hoppers of the subfamily Typhlocybinæ. By Clarence P. Gillette. pp. 709-773, figs. 1-149.
- No. 1139. Revision of the deep-water mollusca of the Atlantic coast of North America, with descriptions of new genera and species. Part I.—Bivalvia. By Addison E. Verrill and Katharine J. Bush. pp. 775-901, pls. LXXI-XCVII.

BULLETIN 39.

- Part L. Directions for collecting and preserving scale insects (Coccidæ). By T. D. A. Cockerell. pp. [1]-[9].