FIFTY-THIRD ANNUAL REPORT of THE AMERICAN MUSEUM OF NATURAL HISTORY



1921

THE AMERICAN MUSEUM OF NATURAL HISTORY

The Corporation consists of a self-perpetuating Board of twenty-five Trustees, elected for terms of five years. Also, *ex*officio, The Mayor of the City of New York, The Comptroller of the City of New York, and the President of the Department of Parks.

HISTORY

1869–1872 Presidency of John David Wolfe.

- 1869 (April 6) Museum incorporated.
- 1869 (May 4) Constitution adopted precisely as originally drafted by Joseph H. Choate.
- 1870 First home secured, the Arsenal, Central Park.
- 1872-1881 Presidency of Robert L. Stuart.
- 1874 (June 2) Cornerstone of present building laid by President Ulysses S. Grant.
- 1878 (January 30) Contract between Trustees and Department of Parks, as drawn up by Messrs. Andrew H. Green and Joseph H. Choate, adopted by the Park Commissioners.
- 1881–1908 Presidency of Morris K. Jesup.
- 1893 Museum opened to the public on Sundays.
- 1908– Presidency of Henry Fairfield Osborn.
- 1908 Constitution amended making

The Mayor of the City of New York,

The Comptroller of the City of New York,

The President of the Department of Public Parks, ex-officio members of the Board of Trustees.

1921 Greater New York Charter amended, placing the Museum on the same basis as schools with respect to Corporate Stock Appropriations, by Chapter 618 of the Laws of 1921.

THE PRESIDENTS

John David Wolfe	1869-1872
Robert L. Stuart	1872-1881
Morris Ketchum Jesup	1881-1908
Henry Fairfield Osborn	1908-

THE AMERICAN MUSEUM OF NATURAL HISTORY

Incorporated in 1869

"For the purpose of establishing and maintaining in said city a Museum and Library of Natural History; of encouraging and developing the study of Natural Science; of advancing the general knowledge of kindred subjects, and to that end of furnishing popular instruction."

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Annual Members	Patrons	119
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*Residing fifty miles or more from New York City.

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An Annual Pass admitting to the Members' Room.

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Gifts, to the extent of fifteen per cent. of total income, and Bequests of any extent to The American Museum of Natural History are exempt from federal taxation, under the Federal Revenue Act of 1918.

FORM OF GIFT OR BEQUEST

I do hereby give and bequeath to "The American Museum of Natural History" of the City of New York,.....

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The Endowment Fund was established in 1884. It now amounts to \$9,572,732.10. The Trustees especially desire to insure the permanent growth and welfare of the Museum through an increase of the General Endowment Fund. The additional sum of \$2,000,000 is needed at present.

BUILDING FUND

The Building Fund was established in 1916. It now amounts to \$124,845.52. The Trustees desire to celebrate the Fiftyfifth Anniversary of the Founding of the Museum, namely, 1924, through the Completion of the Southern Half of the great building, partly by the City, partly by gift, which will cost approximately \$9,000,000.

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FIFTY-THIRD ANNUAL REPORT OF THE TRUSTEES OF THE AMERICAN MUSEUM

THE AMERICAN MUSEUM OF NATURAL HISTORY

FOR THE YEAR 1921



FOR THE FREE EDUCATION OF THE PEOPLE FOR EXPLORATION, RESEARCH, EXHIBITION AND PUBLICATION

TO THE CITY OF NEW YORK Issued May 1, 1922

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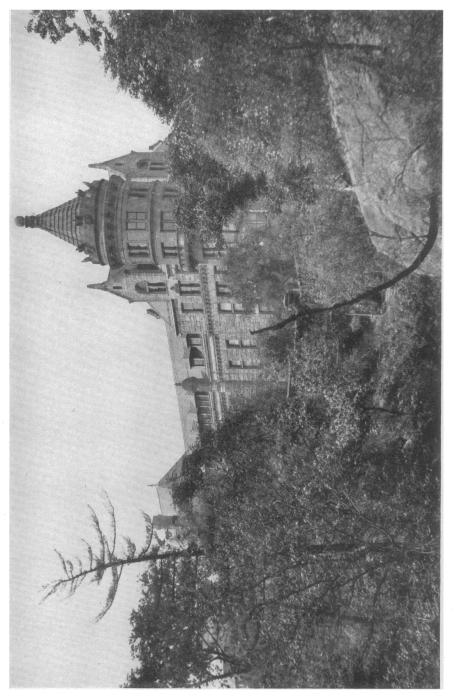
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THE AMERICAN MUSEUM OF NATURAL HISTORY From the West Drive, Central Park

THE AMERICAN MUSEUM IDEAL

BY

PRESIDENT HENRY FAIRFIELD OSBORN

"***Next, a spacious, wonderful garden, wherein whatsoever plant the sun of divers climates, out of the earth of divers moulds, either wild or by the culture of man, brought forth, may be, with that care that appertaineth to the good prospering thereof, set and cherished; this garden to be built about with rooms to stable in all rare beasts and to cage in all rare birds, with two lakes adjoining, the one of fresh water, the other of salt, for like variety of fishes. And so you may have in small compass a model of universal nature made private. The third, a goodly huge cabinet, wherein whatsoever the hand of man by exquisite art or engine hath made rare in stuff, form, or motion; whatsoever singularity, chance, and the shuffle of things hath produced; whatsoever nature hath wrought in things that want life and may be kept, shall be sorted and included.***"

-New Atlantis, by Francis Bacon, 1622-1624.

The American Museum of Natural History, in coöperation with its sister institutions, the Botanical Garden, the Zoölogical Park and the Aquarium, is beginning to fulfill the dream of the Natural Philosopher, Francis Bacon, namely, to bring together the plants, the animals, the "rare beasts," "rare birds," "variety of fishes"—"whatsoever nature hath wrought in things that want life and may be kept," so that we "may have in small compass a model of universal nature made private." The founder of inductive science, if he could visit the City of New York today, would find all these wonders of nature—living, lifeless, and extinct gathered from every clime and every continent, from the Arctic and Antarctic Seas, from the Americas, Europe, Asia and Africa, from Polynesia, and now at last from Australia.

It was inevitable that the American Museum should become a World Museum, as New York has become a World City and as the United States has become a World Power, in the best sense of the diffusion of light and learning, the basis of true civilization, which rests in every country, as with us, in a knowledge of and obedience to the Laws of Nature. As the beneficent work of the Rockefeller Foundations spreads the laws of health in all parts of the world, as the Smithsonian Institution and the Carnegie Institution extend American scientific research the American Museum is fulfilling its ideal when it sends its able and devoted explorers, world-wide, to gather and compare both for our own benefit and for the benefit of every country which we may visit. The governments and scientific institutions of all these countries are coöperating with us; specimens and scientific literature are being freely exchanged, and the methods of Museum and of Nature education, which we are developing from originally European prototypes, are also going out to every country. As a result, we are receiving the most cordial cooperation—political, institutional and personal. Yet it appears that we are only on the threshold of what may be accomplished when the American Museum Building is complete, when every continent and every natural division of the earth's surface are represented.

INDORSEMENT BY THE CITY GOVERNMENT

The outstanding event of 1921 was the decision of the present City Government to renew the building construction of The American Museum of Natural History, which has been suspended for the last sixteen years owing to financial depression, to the suspension of all activities during the war, and to the high cost of building following the war. On December 28, 1921, the Board of Estimate and Apportionment voted unanimously the sum of \$1,500,000, which is believed to be sufficient to erect Sections 9 and 10 of the building as planned in 1875,—the Southeast Wing on Central Park West, and the Southeast Court Building. This leaves seven sections still to be erected to complete the series of seventeen halls to be devoted to the natural history of all parts of the world.

It is entirely the public educational side of the Museum's work which the City is supporting so liberally. The Museum serves alike the schools of the five Boroughs of Manhattan, Bronx, Brooklyn, Queens and Richmond, reaching a total in 1921 of 1,449,608 school children. There were in use 869 collections, and the following schools were served regularly:

Manhattan Bronx Brooklyn Queens Richmond	49 149 73
	477

This is exclusive of the distribution of lantern slides, illustrating the work of the Museum in all parts of the world and

DLIVEWAY EDUCATIONAL PLAN OF PROPOSED SCHOOL SERVICE BUILDING (SOUTHWEST COURT WING) PALSENT GAMEZ SCHOOL EXHIBITIONS IN NATURE STUDY AND HEALTH CUTTOM EXHIBITS OF SCHOOL WOTHER, bgraphs Nature Objects Models SERVICE JO SCHOOLS OF GREATER NEW YV Service Administration Lecture Service Currulation of Stidds and E Stock and Supply Rooms for Natury Study **ASSER** ING AI REPARATION OF SCHOOL DELIVERY SERVI I OF TRACHERS AND Jal W hon for lass add D LIVE WAT PALESENT BUILDING TRIK. ILOOL SECOND PLOOR. POURTE FLOOR FIRST PLOOR FIFTE FLOOL

Trowbridge and Livingston, Architects

OF THE AMERICAN MUSEUM OF NATURAL HISTORY

providing visual instruction material in geography, history and natural science, which numbered 209,451 and served 182 schools. The circulating collections for branches of the New York Public Library were studied by 106,831 persons. The number of schools served outside of the Museum was 477 in all the Boroughs, and the number of pupils studying the collections was 1,247,515.

In less than a year, observations made and photographs collected by Museum expeditions in Australia, Asia, South America, Polynesia and Western Europe may be made accessible to the public school teachers for classroom work. This branch of the Museum's activity has far outgrown the present space capacity of the Museum to care for it properly. On a single day, as many as 2,500 high school boys and girls may be in the Museum preparing for their examinations. They must be adequately taken care of. Still more elaborate is the care which must be extended to large classes coming for a day from outlying parts of the City of New York or from neighboring cities both in New York and New Jersey, which are using the Museum in increasing numbers, and desire to remain in the building during the day. It is for these purposes that a special SCHOOL SERVICE BUILDING has been planned in the Southwest Court, to be devoted exclusively to school education in all its grades. This building is now under consideration by the Board of Estimate. This will be Section 11 of the building program.

The following is a prospectus of the present and future building plans, as approved by the Trustees at the Annual Meetings of 1921 and 1922:

SECTIONS ERECTED OR APPROPRIATED FOR

		Approximate
Section 1—BICKMORE	1874-1877 1890-1891	Cost \$700,000.00 800,000.00
Section 3-North American	1894-1895	600,000.00
Section 4—South American	1895-1897	511,775.00
	1897-1899 1897-1899	529,002.50
Section 6—EUROPEAN Section 7—PRESENT LECTURE HALL	1899-1900	417,632.50 108,900.00
Section 8—Polynesian	1906-1908	511.090.63
Section 9—ASIATIC Section 10—OCEANIC	1922-1924 } 1922-1924 }	1,500,000.00
Supplementary Equipment for All Sections	1900-1921	\$5,678,400.63 1,256,420.85
Total past cost		\$6,934,821.48

PROPOSED NEW BUILDING SECTIONS	Cost Without Equipment
Section 11-MAXWELL-SCHOOL SERVICE BUILDING	
Section 12—African	
Section 13-ROOSEVELT-Central Park West Entrance	
Section 7-ASTRONOMIC	
Section 14—Central American	
Section 15—Ancient Mexican (Aztec)	
Section 16—New Lecture Amphitheater	1,541,800.00

Total future cost \$8,610,058.00

From the above it appears that the City has thus far appropriated a grand total of \$6,934,821.48 for building and equipment. This amounts to an average annual expenditure since 1874, when the corner-stone of the first building was laid by President Grant, of \$144,475 for building and equipment.

It appears that a minimum of \$8,610,058 is needed to complete the American Museum as a World Museum, above described, for the education of a civic population which will exceed 7,000,000. Three plans are on foot whereby the City may be relieved from carrying this entire burden of expenditure:

- First, Section 13—ROOSEVELT HALL—has been recommended to the Roosevelt Memorial Commission for construction by the State of New York;
- Second, Section 7—ASTRONOMIC HALL—has been recommended to the Trustees of the Carnegie Corporation for erection as a Memorial to Andrew Carnegie;
- Third, Section 15-ANCIENT MEXICAN-is also seeking a Benefactor.

CORDIAL COÖPERATION OF CITY AND CITIZENS

For every dollar contributed to the American Museum by the City from tax funds, the citizen receives \$3.00 in value. Although the present City Government has been more liberal than any of its predecessors, providing for maintenance in 1921 the generous sum of \$352,025.52, the generosity of citizens of New York so far exceeds this provision by the taxpayers that it nearly doubles it. The growing appreciation of the Museum by the public is shown by the attendance, which has risen from 613,152 in 1910 to 1,174,397 in 1921. Sunday opening, which was one of the most warmly debated questions in the early history of the Museum, leading to the resignation of some of our strict Sabbatarians, during the year 1921 totals 327,888, showing that the Museum is sought for wholesome and inspiring education during the Sunday afternoon hours by constantly increasing numbers. The Sunday attendance during January, 1922, alone has been 51.062.

Like all other educational and municipal institutions, the *total* cost of operating the Museum has more than doubled during the last decade, the cost rising from \$372,121.87 in 1910 to \$990,-180.84 in 1921. This increase is due not to the increase in numbers of our Scientific Staff, but to the absolutely necessary increase in salaries, wages, cost of heating and lighting, and to the increased cost of all materials that enter into the highly varied activities of the institution. Thus the deficiency for the year 1921, amounting to \$88,349.48, was not due to extravagance, or to expansion of the Staff, but to the general increase in the cost of operation. To meet this, \$56,000 was contributed from the accrued interest of the Sage Fund and \$32,349.48 was contributed personally by the Trustees.

To balance City expenditures in maintenance, equipment and building, the scientific or nature side is entirely cared for from Trustees' Funds, which, through the Jesup, Sage, Juilliard and other endowments, are steadily increasing. Thus, it is interesting to recall that while during the past sixteen years the City has expended \$5,369,674.35 on maintenance, building and equipment, the total amount contributed by the Trustees, Members and friends of the Museum to the Endowment and to the enrichment of the collections is \$12,556,566.28, which is more than double the amount contributed by the City.

NEW GENERAL ENDOWMENT OF TWO MILLION DOLLARS NEEDED

The recent building appropriation of \$1,500,000 by the City brought forth a chorus of approval from the press and from the public, because it is obvious to all that a financial investment whereby the people of the City receive \$3.00 worth for every \$1.00 of taxpayers' money that is expended is an eminently advantageous one. In its desire to give the people of the City a full educational return, the Museum has in fact gone beyond its immediate resources and additional general funds must be raised.

For the current year (1922), the estimates by the staff were \$121,059.56 beyond the income, and the Trustees very reluctantly cut down the work of the Museum by the amount of \$81,059.56 and have guaranteed to raise \$40,000 through their personal contributions and gifts of Members. This recurrent deficiency can be obviated only by raising an additional general endowment

fund of \$2,000,000. The Trustees have decided that efforts shall be made to raise this \$2,000,000 during the present year. It is probable that the Museum will receive \$250,000 from the Amos F. Eno Bequest, which will leave \$1,750,000 to be raised by public contributions. Towards this amount, one of our Trustees has agreed to contribute \$250,000, provided that three other contributions of the same amount are secured. This new General Endowment of \$2,000,000 will not only restore the Museum to its full-time efficiency, which is temporarily arrested this year, but will enable us to more adequately prepare to keep our promise to the City Government that when Sections o-ASIATIC-and 10 -OCEANIC-are completed, the Museum will be in a position to completely fill them with specimens which are now in store-rooms, including many large and beautiful groups and mounts already prepared, and others awaiting preparation. This renders necessary a concise review of the present state of our collections and the sources from which they have been derived.

Arctic and Antarctic Collections

The Crocker Land Expedition (1913-1917) achieved its main objective in the attainment of 82° 30' north latitude on the Polar

Crocker Land Expedition

Sea, through the intrepid work of Donald B. MacMillan and Fitzhugh Green. Crocker Land was not discovered because it did not exist. There is no doubt that Admiral Peary, who was convinced

of its existence to the last moment of the departure of the expedition, was deceived by a mirage. The narrative of the expedition appears in the leader's volume, "Four Years in the White North," published in 1918 by Harper and Brothers. According to agreement, Mr. MacMillan's Geographical Report and the scientific observations have been handed over to the American Geographical Society, but they have not been published. We have not yet been able to secure the reports of Mr. W. Elmer Ekblaw, one of the most able members of the expedition.

If Crocker Land had existed, the expedition would have been acclaimed a brilliant success, would have attained world-wide fame, and no difficulty would have been experienced in meeting the heavy financial losses caused by the shipwreck of the first steamer, the failure of the first and second relief vessels to reach their objective and rescue the party, and the high cost of the third relief steamer, secured during the war. As it turned out, while the credit of the work accomplished was equally divided among the three institutions, namely, the American Museum of Natural History, the American Geographical Society and the University of Illinois, the real burden of financing and conducting the rescue of the expedition has fallen upon the Museum, which has borne \$86,045.07 of the total expenditure of \$169,-260.27, of which \$153,660.27 has been paid, leaving a deficiency of \$15,597.71 still unprovided for at the close of 1921. The financial contributions of the three institutions, the contributions from other sources and the deficiency at the present time are as follows:

American Museum of Natural History American Geographical Society University of Illinois Other Sources Deficiency	\$86.045.07 19,000.00 10,000.00 38,617.49 15,597.71
Total cost of expedition	169,260.27

A recent issue of the *Encyclopædia Britannica*, Volume XXX, gives the following résumé of the expedition:

The American Crocker Land Expedition.—This expedition was sent in 1913 by the American Geographical Society and other bodies in the United States to search for Crocker Land, which had been reported by Peary in 1906 as lying to the W. of Grant Land.

D. B. MacMillan, the leader, had with him W. E. Ekblaw and M. C. Tanquary, naturalists, and Lt. F. Green, cartographer. Failing to reach either Pim I. or Flager Bay in Ellesmere Land, winter quarters were established at Etah, where a meteorological station was maintained throughout the duration of the expedition. In March 1914 MacMillan and Green crossed Smith Sound on the ice, traversed Ellesmere Land, and, passing by Bay Fjord and Nansen Sound, reached Cape Thomas Hubbard. Thence a journey N.W. over rough sea ice for 150 m. failed to reveal any trace of land, and the party returned to Etah by the same route. The farthest point reached was lat. 82° 30' N., long. 108° 22' 30" W. The members of this expedition made several other long journeys. In 1916 Ekblaw crossed Ellesmere Land from Cape Sabine to Bay Fjord and, passing by Nansen Sound, Greely Fjord and Lake Hazen, reached Fort Conger, Greely's former station on Robeson Channel. He returned to Etah across Kennedy Channel and along the shores of Kane Basin. The same year MacMillan made a long journey to Amund Ringnes I. and Christian I. In 1917 a detailed survey was made of the coast of Ellesmere Land from Cape Sabine to Clarence Head, which considerably altered the charts based on the rough surveys of Inglefield, Kane and Hayes. Several expeditions were sent to relieve the explorers at Etah. The first in 1915 met with an accident, and had to winter in North Star Bay; the second in 1916 failed to get through Melville Bay, but the third in 1917 prought back safely those members of the expedition who had not previously returned *via* the Danish settlements in Greenland. The Museum is fortunate in possessing all the wonderful natural history material secured by the three great expeditions

Previous Arctic and Antarctic Expeditions of Peary, including his personal sledge which reached the North Pole. Beside this will be placed in the Arctic AND ANTARCTIC HALL, Southeast Pavilion, Section 5, the sledge which carried

Amundsen's provisions to the South Pole. With these priceless exhibits will be placed the projections of the entire history of North and South Polar explorations. Groups of Eskimo and of the characteristic mammals and birds of the North Pole will contrast with the penguin and seal fauna of the borders of the relatively lifeless Antarctic Continent. The mingling of human and animal groups of zoögeographical regions is a new feature in the arrangement of the American Museum collections which has already been tried with success in the present African Ethnology Hall and will be introduced also in the South American and Australian Halls.

The Arctic collections of the American Museum are the result of a long period of Polar explorations. Through President Jesup's connection with the Peary Relief Expedition of 1895 and through the courtesy of the Peary Arctic Club, the Museum received anthropological and zoölogical material gathered by Rear Admiral Pearv in Grant Land. Ellesmere Land and North Greenland. In 1897, Captain George Comer was furnished a full list of Arctic desiderata, and for a period of ten years he collected for the Museum while on his extensive whaling cruises. His collection represents the culture and animal life of King William Land, the north coast of Hudson Bay, Melville Peninsula, Baffin Land and Southampton Island. He was assisted in 1902 by Captain James S. Mutch, then whaling in Cumberland Gulf. Early Arctic exploration was also conducted by the James M. Constable Expedition, sent out in 1899 under Mr. A. J. Stone to the Mackenzie River region. Mr. Stone not only secured fine specimens of Arctic mammals but also obtained valuable data respecting their distribution and habits and important geographical information. Mr. Vilhjalmur Stefansson, accompanied by Dr. R. M. Anderson, was sent out in 1908 and attracted worldwide attention by his rediscovery of the blond Eskimo. The work

of these men in geography, geology, botany and ethnology was hardly less important.

Through the liberality of Mr. Arthur Curtiss James, this Museum, coöperating with the Brooklyn Institute of Arts and Sciences, was able in 1912 to send Dr. Robert Cushman Murphy to South Georgia abroad the whaler "Daisy." Doctor Murphy succeeded in securing abundant scientific data and important collections of mammals and birds, including the material for the group of King Penguins.

VANISHING LIFE OF AUSTRALIA

We are approaching the close of the Age of Mammals all over the world, but in no continent has the devastation been more

First Australian Expedition at in no continent has the devastation been more rapid than in that of Australia, owing to three causes: deforestation, an enormous fur trade, and an increasing leather trade. In 1921, it became

apparent that the American Museum must secure its representative collections now or never. Accordingly an expedition headed by Curator William K. Gregory was sent to Australia to meet representatives of leading Australian scientific institutions; to lecture in the various cities, and to explain the chief purposes of the Museum, which are to secure an exhibition of the wonderful and unique life of Australia, present and past, as distinguished from a research collection which belongs properly in the Australian Museums and in the great British Museum of Natural History in London. Accompanying Doctor Gregory was Mr. H. C. Raven, a most experienced and able collector, who has already reported a very encouraging beginning in this great undertaking. At the same time, Doctor Gregory planned a series of exchanges between the American and the Australian Museums -especially of educational exhibits-which will be mutually advantageous. Scientific men, as well as the government, of Australia have shown a cordial attitude towards the work of the expedition, which has recently received a written indorsement from the British Ambassador at Washington, Sir Auckland Geddes.

The total amount expended on this work during the year 1921 was \$7,176.15.

The location of the Australian Hall has not yet been definitely determined. An initial exhibition of the Australian collections will be displayed in the center of the Philippine Hall.

CONTINUED EXPLORATION IN ASIA

Asia, by tradition believed to be the "Cradle of the Human Race," is known to be the cradle of the great mammalian races

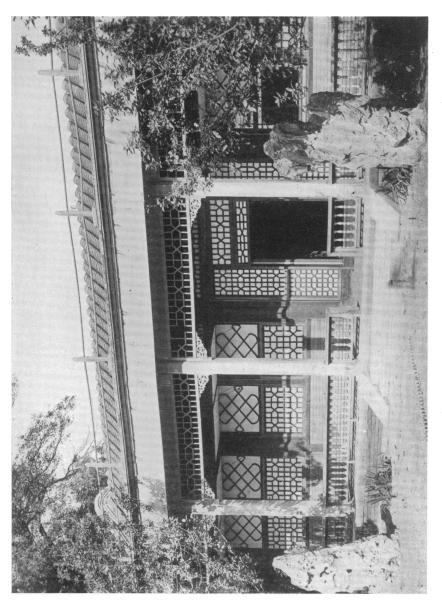
which spread westward into Europe and Africa,

Third Asiatic

and eastward into the Americas. Our knowledge of this wonderful chapter in mammalian and also Expedition reptilian history is absolutely confined to the relatively few Geologic Horizons of India, Burma and China. To break into this unknown chapter of the life history of the earth and perhaps to throw further light on the prehistory of man were the two main objects of the Third Asiatic Expedition, admirably organized and financed under the leadership of Associate Curator Roy Chapman Andrews, by the American Museum of Natural History in coöperation with the American Asiatic Association and its magazine Asia. A representative collection of the mammals, birds, reptiles, amphibians and fishes of the entire East Asiatic Provinces is already assured, as a tangible result of the first year of this expedition and of the two previous trips under the same leader.

Plans are being made for the publication of the results of these collections in a series of volumes of Asiatic Contributions in Zoölogy and Geology, similar in extent to the series of volumes entitled The Zoölogy of the Belgian Congo. It is expected that in this work the Museum will secure the coöperation of leading American scholars and specialists, as is being done in the preparation of the unique and valuable Congo series. Besides collecting through Shansi and Shensi and in Wan-hsien, the first year has been chiefly exploratory-in zoölogy under Mr. Andrews and Mr. Clifford H. Pope, and in palæontology under Associate Curator Walter Granger. Many of the rarest living animals of the world have been collected and are on the way to the Museum. Field work in Mongolia opens in the spring of 1922. Mr. Andrews's reports and narrative will appear in Asia, the journal of the American Asiatic Association with which the Museum is in cordial coöperation, and a series of articles will also appear in Natural History, the Museum Journal.

The generous sum of \$161,881.50 has been promised for this expedition. This provides an average of \$32,376.30 as an annual expenditure for the period of five years. The list of those who



DEPARTMENTS OF MAM MALOGY AND VERTEBRATE PALÆONTOLOGY HEADQUARTERS OF THE THIRD ASIATIC EXPEDITION IN PEKING The Main Laboratories. The Motion Picture Studios are on the left and right (not shown)

have thus shown their interest in the least-known continent in the world and their confidence in American science to advance our knowledge is a very notable one, the principal contributors being the following:

American Museum of Natural	Mrs. Adrian Hoffman Joline			
History	Mr. Darwin P. Kingsley			
American Asiatic Association	Mr. Thomas W. Lamont			
Mr. George F. Baker	Mr. Gilbert S. McClintock			
Mr. George J. Baldwin	Mr. J. P. Morgan			
Mr. and Mrs. Charles L. Bernheimer	Mr. Dwight W. Morrow			
Mr. George T. Brokaw	Miss Margarethe Watson Potter			
Mr. Sidney M. Colgate	Mr. John T. Pratt			
Mr. Henry P. Davison	Mr. John D. Rockefeller, Jr.			
Mr. Childs Frick	Miss E. L. Rosensohn			
Mr. W. A. Harriman	Mrs. Willard D. Straight			
Mr. Arthur Curtiss James	Mr. Albert H. Wiggin			

The headquarters of the American Museum's Third Asiatic Expedition in Peking have been equipped not only for the reception of collections and as the base of the Museum's expedition, but for the proper reception of officials of the Chinese Government, on whose cordial coöperation the success of the expedition largely depends.

Thus the close of the year 1921 finds the expedition well under way. Mr. Andrews has completed a successful trip into Shensi for Takin and other mammals; Mr. Clifford Pope has visited the Eastern Tombs District and the Yangtze River Valley for fish, reptiles and batrachians, and is spending the winter at Tung Ting Lake, Hu-nan, where his collection is rapidly increasing; Mr. Walter Granger joined Mr. Andrews in June to represent the Department of Vertebrate Palæontology and has undertaken an investigation of the fossil mines of Wan-hsien.

While the fossil history of China and Mongolia is being unraveled by the Geological Survey of China, aided by the special

India Expedition work of Mr. Granger and of Professor C. P. Berkey of Columbia University, who joins the expedition in the spring of 1922, the famous fossil beds of India are being examined by our most experienced field worker, Mr. Barnum Brown, who after two years' absence rejoined the Museum's staff on August 1, 1921, and is now working in the Siwalik Hills, in Bugti and in Burma, with the cordial coöperation of Dr. Guy E. Pilgrim and other officials of the Geological Survey of India. The Museum owes this expedition to a liberal gift received from Mrs. Henry Clay Frick for this special purpose.

Collections illustrating the life and culture of Pacific Coast tribes as far west as the Amur River, Siberia, and in the region

extending from the Sea of Okhotsk to the Lena Previous River and the Arctic Sea were secured between Asiatic 1897 and 1903 by the Jesup North Pacific Expedi-Expeditions This was planned by the late Dr. F. W. tion. Putnam, and the late President Morris K. Jesup provided the funds necessary for a thorough investigation of the tribes of the North Pacific Coasts of Asia and America, in order that the physical and cultural relationships of these tribes might be determined. Under the direction of Professor Franz Boas, several parties, headed by Dr. Berthold Laufer, Dr. Waldemar Jochelson and Dr. Waldemar Bogoras, went into the field between 1897 and 1903.

Ethnological investigation in China was first undertaken in 1901 by the East Asiatic Expedition, also under Dr. Berthold Laufer. Mr. Jacob H. Schiff's liberal contribution of \$18,000, and other generous gifts from Messrs. Edward D. Adams, Cornelius N. Bliss, Henry C. Frick, Edward H. Harriman, George A. Hearn, Morris K. Jesup, Clarence H. Mackay, James H. Smith, Samuel Thorne, and the Union Pacific Railroad Company, enabled Doctor Laufer to remain in China three years, and to make a systematic collection covering various aspects of the social and industrial life.

A summary of our expeditions to Asia is as follows:

Jesup North Pacific Expedition, 1897-1903. East Asiatic Expedition, 1901-1905. First Asiatic Zoölogical Expedition, 1916-1917. Second Asiatic Zoölogical Expedition, 1918-1919. Third Asiatic Expedition, 1921-

Our collections of Chinese, Mongolian and Tibetan ethnology have been enriched by a number of valuable specimens, including especially a Tibetan "sacred apron" made of portions of human bones, found by a British officer of the Younghusband Expedition to Lhasa in 1903-1904, and presented to the Museum by Mrs. John Magee; also a large collection of ethnological specimens from Tibet, collected by the Rev. H. B. Marx, and presented by Mr. J. P. Morgan.

Collections for the Oceanic Hall

Years have been devoted to the plans, collections and expeditions for the Oceanic Hall; in fact, the collection to be installed in the gallery goes back to the first days of the Museum, when many of the merchants of New York had private collections of shells. Facing the entrance will be a Coral Reef Group, now being designed by Curator Roy W. Miner. From the ceiling will be suspended models and skeletons of whales. The floor will be devoted to mammal groups, such as walrus, sea elephants, sea lions and models of the whales. The following is a partial list of the exhibits which are to go into this hall:

Whales and other Cetaceans, including 27 models and 8 skeletons on exhibition, 24 Whale and 15 Blackfish skeletons in storage, life-size model of Sperm Whale, life-size models of Humpback Whale, Killer Whale and small Cetaceans, specimens and data for all of which were obtained by expeditions to Long Island, Quebec, British Columbia, Alaska, Japan and Korea, by Roy C. Andrews, 1907 to 1914, through contributions of Mr. George S. Bowdoin and through the Jesup Fund; Manatees: 3 skeletons, 1 model, 1 specimen, purchased from the Jesup Fund.

Sea Elephant Group, 6 specimens; also 2 skeletons; obtained by expedition to Lower California by Charles H. Townsend in 1911, through contributions by Mr. Arthur Curtiss James; Fur Seal Habitat Group, 7 specimens, obtained through contribution of Mr. D. O. Mills; other Seals: on exhibition, 27 specimens, 1 skeleton, 5 skulls; in storage, 40 skeletons, 80 skulls.

POLYNESIA AND THE PACIFIC ISLANDS

Through the personal influence of one of our Trustees, Dr. Leonard C. Sanford, Mr. Harry Payne Whitney decided to send Mr. Rollo H. Beck on a collecting expedition for birds of Polynesia, to extend over a period of five years, during which time he was to visit all of the principal islands. Thus was initiated, under the

most favorable auspices, the Whitney South Sea Expedition. Mr. Beck, the leader of the expedition, is accompanied by Mrs. Beck, and another assistant, Mr. Ernest H. Quayle. The success of the expedition seems assured. The generous sum of \$100,000, contributed by Mr. Whitney to cover the period of five years' work, has also enabled us to purchase a vessel for the party, capable of navigation to all parts of the islands. The collections of birds already received are superb in quality and give promise of being absolutely representative of the avifauna of this great region. As a part of the plan, Dr. Robert Cushman Murphy, in February, 1921, was appointed Associate Curator of Marine Birds. He is taking immediate care of the collections as they are received, is publishing preliminary descriptions of what is new to science, and at the same time is working on the Brewster-Sanford Collection of Oceanic Birds, chiefly from the South American Coast regions.

PROGRESS IN THE STUDY AND COLLECTION OF MAMMALS

The loss of our beloved Senior Curator, Doctor Joel A. Allen, on August 29, 1921, removed one who has been our acknowledged leader in the study of both mammals and birds since he came to the Museum in 1885. No one in this country or abroad was qualified to fill the great position which he created in American zoölogy, through his sterling character, his high intelligence, his enthusiasm both in research and in publication, and his delightful relationship with his associates. Owing to his undiminished powers of work almost to the last day of his life, we are fortunate in possessing the completed manuscript which makes up a memorial volume entitled *Mammals of the Congo*, to be published in the series of volumes entitled *Zoölogy of the Belgian Congo*.

The Museum is also fortunate in the splendid training given by Doctor Allen to the younger men—especially Curator Chapman, Mr. Andrews and Mr. Anthony, who are endeavoring to maintain both in Ornithology and in Mammalogy the very high standard of excellence and breadth set by Doctor Allen. In the absence of Associate Curator Andrews, who is in Asia, Associate Curator Anthony, in Charge, assisted by Mr. Herbert Lang, is putting the entire collection in order. Mr. Anthony is devoting himself especially to researches on our South American collections.

Our collections of mammals, briefly summarized in last year's



Eugenics Congress

Annual Report (See Annual Report of the President for 1921, page 34), may be more fully summarized as follows:

Europe Asia Africa North America South America Australia Porpoises Whales	4,504 6,083 21,881 7,940 139	Skeletons 34 137 557 280 105 58 1,171 33 10
whates		1,214

In the matter of mounting and exhibition, both of skins and skeletons, the American Museum is far behind. It has by no means kept pace with the acquisition of material from all parts of the world, and it is necessary to plan on a very large scale for the effective and artistic mounting, not only of the great collections already on hand but of those which are rapidly coming in from Asia and from Australia. In the next *Annual Report*, the steps which the Trustees have taken to establish a strong and thoroughly modern Department of Preparation will be described.

The principal achievement of the year has been the opening of the Akeley African Elephant Group, photograph of which is given on the adjoining page, on which Mr. Akeley has been engaged ever since 1909 when he left the United States for Africa to collect the materials. This work is a masterpiece, both in design and in *permanence*, because it represents the new method which Mr. Akeley has developed while on the Museum's staff. It gives a surpassingly lifelike impression, with entirely new technique.

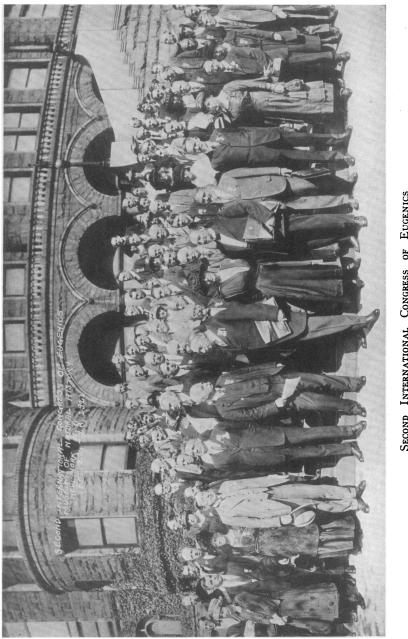
Another unique habitat group for the Roosevelt African Hall is assured. Mr. Akeley, who has been studying the gorilla in its native haunts in the Lake Kivu District of the Belgian Congo, cables that he has secured five fine specimens of the gorilla, the largest, a male, weighing 360 pounds and having an arm stretch of 7' 8". The skins are in excellent condition and when mounted by Mr. Akeley will give the Museum the finest representation of this species in any institution in the world.

Second International Congress of Eugenics

Perhaps the most important scientific meeting ever held in the Museum was the Second International Congress of Eugenics,

which was formally opened on the evening of September 22, 1921, under the Presidency of Henry Fairfield Osborn, nine years after the First Congress met in London. Preparations for the Congress occupied two years' time. President Osborn also visited Europe with the especial purpose of securing the attendance of the leading foreign eugenists. Great Britain was represented by Major Leonard Darwin, who delivered two addresses of such importance that they were quoted all over the France was represented by Dr. Lucien March, United States. Chief of the National Bureau of Statistics, and Dr. Lucien Cuénot, one of her most brilliant biologists; Scandinavia by Dr. Jon Alfred Mjøen, Director of the Winderen Laboratorium of Christiania and delegate of the Norwegian Government, and Belgium was also ably represented by Dr. A. Goværts. Cuba and the Spanish American countries sent able delegates. The United States and Canada were represented with great ability by such leaders as Dr. Charles B. Davenport, Director of the Department of Genetics of the Carnegie Institution of Washington; Dr. C. C. Little, also of the Carnegie Institution of Washington, who served as Secretary-General of the Congress; Dr. H. H. Laughlin, Chairman of the remarkable Exhibit of Genetics and Racial Heredity, and Dr. Raymond Pearl of the Johns Hopkins Medical School. All the leading universities and state institutions were also well represented. A ladies' Committee, headed by Mrs. E. H. Harriman and by Mrs. Henry Fairfield Osborn, was helpful in securing funds and in the series of receptions. Papers and addresses, numbering more than a hundred, presented to the Congress by the foreign and American delegates, were received with profound attention, and will be collected in a volume to be entitled "Eugenics in the Family, Race and State." The section of the exhibit bearing on immigration was taken to Washington by the Committee on Immigration of Congress, members of which made several visits to the Museum to study the exhibit.

The press was at first included to treat the work of the Congress lightly, confusing it with irrelevant matters, but as the sound and patriotic series of addresses and papers on Heredity, the Family, the Race and the State, succeeded one another, the influence of the Congress grew and found its way into the news and editorial columns of the entire press of the United States.



SECOND INTERNATIONAL CONGRESS OF EUGENICS Held at the Museum September 22-28, 1921 Henry Fairfield Osborn, President; Major Leonard Darwin, Vice-President Inasmuch as the World War left the finest racial stocks in many countries so depleted that there is danger of their extinction, and inasmuch as our own race is threatened with submergence by the influx of other races, it was felt by all present and especially by our foreign guests that The American Museum of Natural History had rendered a signal service in providing for the reception and entertainment of the large number of distinguished men and women who attended the Congress.

MEMBERSHIP AND STAFF

At the Annual Meeting of the Board of Trustees, on February 7, 1921, the Trustees elected Dr. Leonard C. Sanford to the Board to fill the vacancy in the Class of 1921, due to the resignation of Mr. R. Fulton Cutting. Mr. A. Perry Osborn and Mr. George F. Baker, Jr., were at the same meeting elected Trustees in the Class of 1923 to fill vacancies due to the death of Mr. A. D. Juilliard and Mr. Henry Clay Frick, and Mr. George D. Pratt was elected to the Class of 1924 to fill the vacancy due to the death of Mr. Joseph H. Choate.

At the same meeting, the Trustees heeded the earnest request of Mr. Adrian Iselin and reluctantly accepted his resignation as Secretary, an office which he had held for the past eight years. Mr. Percy R. Pyne was elected to this office.

In the Administrative Staff, Mr. George H. Sherwood was promoted from Assistant Secretary to the position of Executive Secretary of the Board.

The Trustees created a new department designated as Comparative Anatomy and appointed Doctor William K. Gregory to the Curatorship. The Department of Invertebrate Zoölogy was divided into two new departments, namely, the Department of Lower Invertebrates with Associate Curator Roy W. Miner in charge and the Department of Entomology, in charge of Curator F. E. Lutz. The name of the Department of Anatomy and Physiology was changed to the Department of Comparative Physiology.

The following promotions in the Staff were made:

Dr. J. A. Allen was promoted from Curator to Honorary Curator of the Department of Mammalogy.

Dr. Henry E. Crampton was promoted from Curator of the

Department of Invertebrate Zoölogy to Honorary Curator of the Department of Lower Invertebrates.

Dr. F. E. Lutz was promoted from Associate Curator of Insects in the Department of Invertebrate Zoölogy to Curator of the Department of Entomology.

Dr. H. J. Spinden was promoted from Assistant Curator to Associate Curator of Mexican and Central American Archæology, in the Department of Anthropology.

Mr. N. C. Nelson was promoted from Assistant Curator to Associate Curator of North American Archæology, in the Department of Anthropology.

Dr. Willard G. Van Name was promoted from Assistant in Lower Invertebrates in the Department of Invertebrate Zoölogy to Assistant Curator in the Department of Lower Invertebrates.

Mr. Ludlow Griscom was promoted from Assistant to Assistant Curator in the Department of Ornithology.

The following new appointments were made at the Annual Meeting on February 7, 1921:

Dr. William K. Gregory was appointed Curator of the Department of Comparative Anatomy.

Mr. S. H. Chubb was appointed Assistant in Osteology, in the Department of Comparative Anatomy.

Dr. J. Howard McGregor was appointed Research Associate in Human Anatomy in the Department of Comparative Anatomy.

Miss Grace E. Fisher was appointed Assistant in the Department of Public Education.

Dr. E. W. Gudger was appointed Associate in Ichthyology.

Mr. Carl E. Akeley was appointed Associate in Mammalogy.

Mr. Herbert F. Schwarz was appointed Research Associate in Hymenoptera.

At the meeting of the Executive Committee of April 20, Mr. Karl P. Schmidt was reappointed Assistant Curator in the Department of Herpetology, the appointment to take effect May 10.

HOSPITALITY TO SOCIETIES

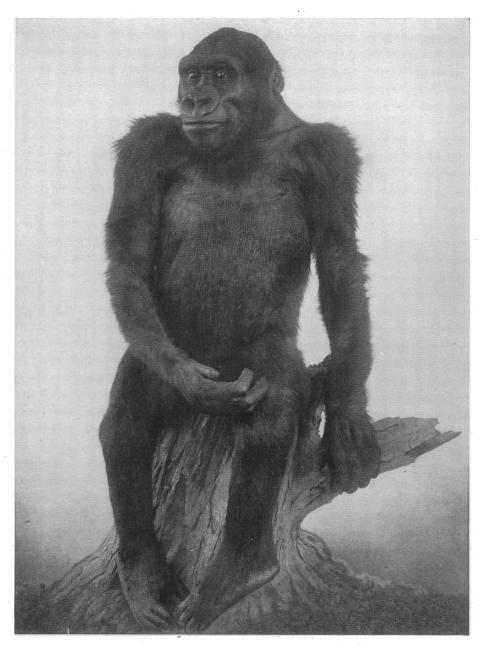
The Museum welcomes to its auditorium and meeting rooms many educational and scientific organizations, and important meetings have been held here during the past year. Among the Societies that have held meetings, exhibits, or lectures at the Museum during 1921 are the following:

American Association for the Advancement of Science American Ethnological Society American Red Cross American Scenic and Historic Preservation Society American Sweet Pea Society Aquarium Society Arts and Crafts League Boy Scouts John Burroughs Memorial Association Board of Education, City of New York (public lectures) City History Club of New York Cleveland Museum of Natural History Columbia University (classes) Federation for Child Study Galton Society for the Study of the Origin and Evolution of Man Geological Society of America Grenfell Association of America Health Institute, Sanitary Engineering Division Horticultural Society of New York Inkowa Club Keramic Society of Greater New York Linnæan Society of New York National Academy of Sciences National Association of Audubon Societies National Research Council Natural History Club New York Academy of Sciences New York Association of Biology Teachers New York Bird and Tree Club New York City Federation of Women's Clubs New York Entomological Society New York Microscopical Society. New York Mineralogical Club New York Tuberculosis Association New York Women's League for Animals

School Garden Association School Nature League Second International Congress of Eugenics Teachers College Club of Ungraded Class Teachers Torrey Botanical Club Visual Instruction Association of New York City West End Medical Association Woodcraft League of America

SPECIAL GIFTS AND ACKNOWLEDGMENTS

We wish to express our appreciation to the many friends who have added to our collections during the year. A detailed list of Accessions is given on pages 200 to 218. Among the gifts of especial interest and value are the following: From Mr. and Mrs. William M. Baldwin, a feather headdress, skin apron, woven belt, neck-scarf feathers, and 3 feather ornaments, from western Paraguay; Hon. Recaredo Amengual N., an ethnological collection consisting of mummies, pottery, blankets, musical instruments, etc., geological specimens, and series of Chilean Niter minerals, from the Province of Tarapaca, Chile; Capt. E. G. Biggle, a squid, rare and of large size; Bernice Pauahi Bishop Museum, a large plaster figure, busts, and skeleton material: the late Dr. E. A. Bogue (through Miss Holmes), casts of jaws and teeth of 1100 white persons and collection of lantern slides made from the casts; Edgar B. Bronson, Jr., Grace Vernon Bronson Tweedy, and Elizabeth Vernon Bronson, 43 specimens, heads and horns, of African big game; Barnum Brown, collections of fossils, modern reptiles, fishes, invertebrates, shells and ethnological material, from Abyssinia and Somaliland; the late Henry A. Cassebeer (through Mr. Remsen Williams), 57 ethnological and several miscellaneous specimens; George Agnew Chamberlain, 1 inyala, from Portuguese East Africa; Mrs. DeWitt D. Cook, greater kudu; the late Dr. Titus Munson Coan, about 3800 specimens of Achatinellid land shells and butterflies, from Hawaiian Islands: Mrs. E. H. Danforth, 20 ethnological specimens, from the Navajo, Ute, and Sioux; Miss Isabel Rogers Edgar, ethnological collection, from Labrador; H. R. H. Chow Chom Erp (through Dr. L. C. Bulkley), silver embroidered sash from Siam; the late Lawrence Preston Goldstone



DEPARTMENT OF MAMMALOGY JOHN GORILLA OR JOHN DANIEL Presented by Ringling Brothers

(through Mrs. Robert Hastings), ethological specimens; Harry Guggenheim, 417 specimens of copper minerals, from Chuquicamata, Chile; Guggenheim Brothers, mummy of prehistoric miner, from Chuquicamata, Chile; Charles Lanier (through Dr. George F. Kunz), Chalcedony statuette "Pas de Danse," by M. Tonnelier; Mining Museum (George W. Card), Warialda meteorite; Mengo L. Morgenthau, official trapping of a Vizier of Morocco of the period of about 1750 A.D., an assemblage of aquamarines, set in gold, and surrounded by small stones of diamond, sapphire and garnet; National Association of Audubon Societies, 10 natural goura (crowns of the Goura Pigeon), 10 natural paradise, full size (plumes of the lesser bird of paradise), 10 natural paradise, diminutive size (plumes of the lesser bird of paradise), 10 black paradise (dyed), 10 made-up paradise ornaments, 90 small made-up paradise ornaments, 10 heron aigrettes (bundles of 40 plumes or sprays each), 500 plumes and semi-plumes of the snowy egret (confiscated by the Customs authorities); New York Zoölogical Society, 83 mammals, 65 birds, and 19 amphibians and reptiles; H. Obermaier, flint and bone implements, sea shells, and fragmentary animal bones from two caves in northern Spain; Ringling Brothers, gorilla, "John Daniel"; Mrs. Nate Salsbury, heads of buffalo, deer, Rocky Mountain sheep, pair of steer horns, and 1 armadillo (African); Ludovic Söderstrom, 60 mammals, including 1 Dinomys and a series of the rare fish-eating rat. Ichthyomys, and 20 bird skins, from Ecuador; Irving K. Taylor, skin of shoe-bill stork, and 8 skulls of crocodiles.

It would be difficult to make acknowledgment in detail of the many important courtesies extended to members of the Museum's expeditions by Government officials, co-workers in science, and citizens in general, in all parts of the world. Such assistance has been of great importance in facilitating the scientific work of the institution, and the Trustees are keenly appreciative of it.

Among those who coöperated we would mention especially, in connection with our Australian Expedition:

Dr. Thomas Storie Dixson, M. B., President of the Board of Trustees of the Australian Museum in Sydney, Dr. Charles Anderson, Director of the Museum, Mr. Charles Hedley, Senior Curator, and other members of the staff. The hospitality of the Australian Museum was extended as headquarters of the

expedition, and our plans were actively furthered by the members of the staff. We wish also to make acknowledgment to Professor Launcelot Harrison, of the University of Sydney, and to Mr. E. C. Andrews, Government Geologist of New South Wales, Sydney. Mr. Ellis S. Joseph, of Sydney, was of great service to the members of the expedition. Through his efforts, Mr. Harry Burrell, also of Sydney, accompanied Dr. Gregory and Mr. Raven on their first collecting trip in the mountains of northern New South Wales. Through Mr. Burrell's influence, they were entertained as the guests of Mr. Clifford Moseley, of Ebor, upon whose station (ranch) they had the opportunity to collect a fine series of kangaroos and numerous flying phalangers and small insectivorous marsupials. Mr. Jim Wilson, of Ebor, another friend of Mr. Burrell, placed his remarkably detailed knowledge of the habits of the marsupials at the disposal of the Museum's representatives. The party were thus enabled to secure in this region splendid exhibition material, a series of skins and skeletons for the Department of Mammalogy, and many preserved specimens for dissection of the muscles, etc., for the Department of Comparative Anatomy.

Our thanks are due also to Mr. Heber A. Longman, Director of the Brisbane Museum in Queensland; to Sir Baldwin Spencer, of the National Museum at Melbourne; to Mr. J. A. Kershaw, Curator of the Museum, and to Mr. F. Chapman, of the same Museum; to Mr. Edgar Waite, Director of the South Australian Museum at Adelaide; to Mr. H. H. Scott, Curator of the Victoria Museum and Art Gallery at Launceston, Tasmania; to Mr. Clive E. Lord, Curator of the Museum at Hobart; and to Professor Γ . T. Flynn, of the University of Tasmania, Hobart.

Through the courtesy of Mr. Gerrit S. Miller, of the United States National Museum, Mr. Charles M. Hoy, who has been collecting in Australia for that Museum for the past two years, placed all his hard-won knowledge and experience at the service of his American Museum colleagues.

The Museum's expedition to Ecuador received the same generous assistance from the officials of the South American Development Company at their mines in southern Ecuador as had characterized a six months' association in 1920. Messrs. William Adams Kissam, J. W. Mercer and A. M. Tweedy, the President, Vice-President, and Resident Manager, respectively, spared no effort to facilitate the work of Mr. H. E. Anthony, of the Department of Mammals, and of Mr. George K. Cherrie, of the Department of Birds.

When the expedition left the mines and went to Quito, the transportation difficulties were reduced to a minimum by the friendliness of the personnel of the Guayaquil and Quito Railway Company. Mr. E. Hope Norton, the President, had given Mr. Anthony letters to the railway officials in Ecuador, and everywhere along the line of the railroad the party met with the most generous spirit of coöperation. Mr. Paget, Superintendent of Terminals, was especially helpful.

Upon the return to New York City, aboard the steamer "Peru," to Panama, and "Quilpue" to New York, generous and careful coöperation on the part of the ship's officers insured the safe transportation of the valuable collections made in Ecuador, and to the Pacific Steam Navigation Company, Messrs. Cherrie and Anthony feel greatly indebted.

When the second expedition to Ecuador, in charge of Mr. Cherrie, left in July, they had the same helpful coöperation from the Ecuadorian officials, the officers of the South American Development Company, and the Guayaquil and Quito Railway Company.

We wish to make acknowledgment to the Miami Aquarium Association, to its President, Mr. James A. Allison, and to the Director, Mr. Louis L. Mowbray, for their courtesy in placing the facilities of the Aquarium and its collecting boat at the disposal of Mr. Nichols, in February.

The Trustees are appreciative of the courtesies and assistance extended to Mr. Miner by Dr. Ulric Dahlgren, Director of the Harpswell Laboratory, Mount Desert, Maine, and by Mr. William Procter, Mr. George B. Dorr and other associates at the Laboratory. Dr. Frank R. Lillie, Director of the Marine Biological Laboratory at Woods Hole, Massachusetts, and Dr. Gilman A. Drew, the Assistant Director of the Laboratory, generously aided the Museum's work at their station.

The work of the Third Asiatic Expedition has been materially advanced by the generous coöperation of Dr. J. G. Schurman, American Minister to China, of Dr. V. K. Ting, Director of the Geological Survey of China, and of Dr. J. G. Andersson, Mining Adviser to the Chinese Republic. The Museum is also indebted for courtesies from the Pacific Mail Steamship Company, through Mr. George J. Baldwin, President; to the Standard Oil Company, for contributions of materials to the expedition; to the United States Rubber Export Company, for tires to equip the motor cars and trucks, and to the Fulton Motors Corporation, who presented two complete trucks to the expedition.

Reports of the Director and Curators REPORT OF THE DIRECTOR

FREDERIC A. LUCAS

For the first time in the history of the Museum, the attendance has reached the million mark, again illustrating the point Attendance that the best way to gain attendance is to have something worth while for the visitor to see. Credit, however, should be given to the weather for a part of the attendance, the fine mild months of January and February having much to do in bringing to the Museum the phenomenal number of 132,589 and 101,452 visitors, a gain over the preceding year of respectively 60,796 and 24,698, the January attendance being practically double the number that ever came before during that month.

As a slight offset to this was the drop in June, caused by the continued moist heat which sent multitudes to the country and sea beaches and kept others in the seclusion of their homes.

The small influence on attendance of special exhibitions that do not appeal to the general public is indicated by the fact that the number of visitors during October, when the Eugenics Exhibition was open, was but 12,000 greater than in 1920, an increase that might have occurred under ordinary conditions.

STATISTICS OF NUMBE	RS REAC	HED BY	THE MU	USEUM .	AND ITS
EXTENS	ION EDUC	ATIONAL	SYSTEM	E	
	1917	1918	1919	1920	1921
Board of Education Lectures Lectures to School Children and Classes visiting the	32,790	21,624	1,191	17,632	27,362
Museum for Study Meetings of Scientific So- cieties and Other Meetings	57,463	21,484	35,221	57,627	51,133
and Lectures	25,549	20,928	21,475	25,491	34,206
Total	115,802	64,036	57,887	100,750	112,701
Halls	786,151	627,302	810,575	937,265	1,061,696
Total Attendance for all Purposes Lectures to Pupils in Local	901,953	691,338	868,462	1,038,015	1,174,397
Centers Numbers reached by Circu-	38,525	19,575	25,575	33,761	30,75 0
lating Collections	1,104, 456	817,610	955,438	1,312,487	1,247,515
Grand Total	2,044,934	1,528,523	1,849,475	2,384,263	2,452,662

The work of publicity, carried on as a branch of the Registrar's duties, involved the preparation and distribution of 50 articles, which were circulated not only in the United States but to some extent in Canada, England and France. The regular mailing list now includes about 300 newspapers, magazines and special writers. The above does not include information and illustrations given to individuals on request.

The sales of publications have continued to be good, and presumably show a demand on the part of the public for informa-Exclusive of "An Hour in the Museum," tion. Sales of 1,551 copies of which were sold, the sales were Publications as follows: General Guide, 5,823; Handbooks, 1,617; Leaflets, 4,894; reprints, 724; a total of 13,058 copies, 1.371 more than in 1920. The sales would doubtless have been larger had it been possible to keep all the publications in print, larger still had it been possible to add to them, but the demands on the printing force have far exceeded their possibilities in the way of supply. The addition of Novitates to the museum publications has, it is hoped, proved of service to the world of science, but it has unavoidably prevented the issue of other matter, so the end of the year sees one Handbook and four Leaflets out of print, besides the General Guide, and the end of several others in sight.

The large sale of the *Guide* is due to the fact that for the first time in ten years it has been possible to keep it continuously on sale throughout the year, a condition that unfortunately can not continue. The small sale of the *Key* is related to the large sale of the *Guide*, and the drop in reprints comes from the fact that some have been made *Leaflets* and others have gone out of print Next to the *General Guide*, by far the "best seller" was the *Guide Leaflet*, "The Hall of the Age of Man," which established a record with a sale of 1,119 copies in eight months.

The output of the printing office shows its customary efficiency in meeting the demands upon it, which, due to the establishment of *Novitates* and the meeting of the Eugenics Congress, have been greater than ever. The Scientific Publications issued are noted in the report of the Librarian. The general work of the printing office is summarized as follows:

	Pages	Copies
General Guide	. 136	5,000
Evolution of the Horse		1,200
Indians of Manhattan Island	. 63	2,000
The Story of Museum Groups	. 36	2,085
Hall of the Age of Man		2,300
Habitat Groups of North American Birds	. 64	1,862
Indians of the Southwest (Handbook)	. 195	2,000
An Hour in the Museum	. 8	4,896
Museologist (6 issues)average		2,100
Abstract of Papers for Eugenics Congress		700
President Osborn's Address of Welcome to	5	
Eugenics Congress		400
Program of Eugenics Congress		1,250
Program of Eugenics Congress	. 4	500

making a total of 20,497 copies of publications of twelve pages and upwards.

 $F_{i}^{(k)}$

MISCELLANEOUS PRINTING DURING 1921

Ir	npressions
Letterheads and other stationery Field and Reserve Collection Labels Report, Requisition and other forms Catalog Cards, Tickets to Lectures, Envelopes, etc. Programs, Circulars, Invitations Color Plates Circulars and Miscellaneous Small Publications Individual Labels 333 Descriptive Labels 244	154,200 14,925 31,480 370,383 96,031 41,500 38,338
577 (average of five each)	2,885

Total 749,742

As a matter of record, it may be noted that some of the labels, particularly those for mammals, contain as much reading matter as a printed page, sometimes as much as two, and some are in the nature of small posters, measuring $18'' \times 24''$, planned to be read at a distance, or, as is often the case, by a number of visitors at once.

Probably the most elaborate "label" installed during the year was that prepared by Ellsworth Huntington, for the Big Tree, in connection with the exhibit of the Eugenics Congress. This included a curve showing weather conditions for 3,000 years, a general statement of the relation of weather to Eugenics, and thirteen more or less detailed statements of the more important historical events during the past related to changes in climate.

This "label" was fifteen feet long and twenty-two inches high and its installation was quite a problem of mechanics.

This statement of labels does not include the many diagrams, large headlines and notices printed or painted by hand, which call for artistic ability and technical skill. Many of these require a day for their preparation, some much more, and with the many demands upon their time, Messrs. Belanske and Vitolo can never hope to catch up with their work. The general labels for the Eugenics exhibits alone required many days of hard labor. This phase of labeling has never been touched upon.

Another phase of labeling is shown by the regional maps in the Hall of Birds of the World: these are small hemispheres in low relief, attractively colored and combining small size with remarkable clearness of detail.

Naturally it has not been possible to do much in the way of adding large groups, in view of the ever growing congestion, but

the close of the year shows several nearly com-Exhibits pleted, by far the most important of these being the Elephants destined for the center of the African Hall.* A new group of Fur Seals, one of Pumas and one of Muskrats are well advanced.

In connection with exhibits, a most important matter has been the casing of the Ground Sloth Group, whose prospective condition has been a source of anxiety to the Director for some years past.

Almost equally important has been the rearranging, lighting and labeling of the exhibit of Reptiles, which now attracts much attention and is studied by many visitors.

The complete remodeling of the Hall of Minerals, and the exhibits in connection with the Second International Congress of Eugenics have, by calling for the services of the construction force and others, held back the prosecution and completion of much work in other lines.

The principal "special exhibition" of the year was that made

Special Exhibits

occupied the entire available space of the Forestry Hall, as well as wall cases in the Hall of the Age of Man.

in connection with the Eugenics Congress, which

A much smaller exhibit, but one of much interest, was that

* Placed on exhibition January 1, 1922.

relating to radium and its applications, made in connection with the visit of Mme. Curie.

There were several exhibitions of posters illustrating the coöperation of the Museum with schools and the use made of its collections. One of these was a competitive exhibit of designs for a cover for *Natural History*, by the Art Classes of Washington Irving High School, and another a set of posters for an exhibition of Indian Art by second-year pupils of the New York School of Fine and Applied Arts. The younger pupils were represented, as on previous occasions, by posters teaching kindness to animals, prepared under the auspices of the Humane Education Committee of the New York Women's League for Animals.

In Memorial Hall and the Eastern Woodlands Hall, on September 30 and October 1 and 2, an exhibit was held, planned by the New York Association of Biology Teachers, to increase interest in nature study among pupils and to give the public an opportunity to see what the schools had accomplished in practical nature study work.

There was a total of 595 accessions during the year, 442 of which were by gift. There were received or forwarded through the shipping department 8,742 shipments, and while some of these were of course

small, a careful record kept for three months showed that the average weight of material handled daily was 4,500 pounds.

After many years of waiting, it has been possible to replace one third of the window shades, and for the first time shades

Care of Building have been used whose color bore some relation to that of the building. The balance of the shades should be replaced, as, aside from those recently put up, there is not an entire shade in the building; lack of funds, high prices, and poor material have deferred the purchase of shades for some years past until their condition has become

as tattered and torn as that of the lover in the nursery rhyme.

Repairs on the roof are practically continuous, gutters, roofing, capping, and leaders calling for incessant renewal.

The changes in the Mineral Hall have naturally led to others, the transfer of wall cases from the Hall of the Age of Man calling for their replacement by those better adapted for Fossil Vertebrates.

A large and important part of the work of construction is never seen by the visitor and but little noticed even by the Museum Staff. This is the construction or alteration of rooms for storage, work and service. Thus the printing offices have again been extended, including a new fireproof storage room; a new office has been constructed for Vertebrate Palæontology, and the room for the attendants made over with needed sanitary improvements, and the first of a series of storerooms for skeletal material built in the attic.

A branch of work that is not realized by the public and little appreciated by Museum officers is that of electric lighting. Twenty years ago, ten years even, no one realized the extent to which electric lights would be used in museums in connection with groups, motion picture service and special exhibits; hence no provision was made for them. New installations have taxed the ingenuity of the Chief Engineer to the utmost to make provision for them, and have increased the work of the electricians to such an extent that the present force is entirely too small to keep up with it. More than this, the limit of the present generators has been reached.

It is again the duty of the Director to call attention to the need of a fence to protect the Museum from damage by children.

Needs of Building While the most serious injury was that caused by the fire that destroyed the whale shed in February, 1920, yet during the past year the actual loss from

broken windows and shrubbery was just inside a thousand dollars.

PUBLIC EDUCATION IN THE MUSEUM AND IN THE SCHOOLS*

GEORGE H. SHERWOOD, Curator

The work of the Department of Public Education in cooperation with the Public Schools and other educational institutions, which has grown up during the past years, has been carried on with energy and efficiency, as the statistics for the year show. This work, no matter how important it may be, does not attract the attention it deserves in a report, simply because it is the same work that has been done for years. While this may be a natural result of the spirit of progress today, it seems only fair to enter here a plea for the correct estimate of the value of the work of the past years, which is being continued into the present. It is these regular activities, which have become fixed habits, that give stability to any institution. The very fact that any particular work is still done after many years in a live organization is proof of its value-otherwise it would have been sloughed off.

Our regular activities in which we have been cooperating with the Schools for years,—such as Lending of Circulating Collections of Natural History Specimens, Lending of Lantern Slides, Lectures for School Children,—have been carried on throughout the year. The following comparative summary of the statistics for 1920 and 1921 tells the story graphically:

	1920	1921
CIRCULATING NATURE STUDY COLLECTIONS:		
Number of Collections in Use	887	869
Number of Schools Served	453	477
Number of Pupils Studying Collections	914,634	1,247,515
LECTURES:		
Number of Lectures to School Children	116	162
Attendance of Pupils	73.766	74.240
Total Number of Lectures, including those to	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
School Children	149	186
Total Attendance at All Lectures	88,873	93,459
LENDING OF LANTERN SLIDES:		-
Number of Schools Served	154	182
Number of Loans to Schools	1,933	3.187
Number of Slides Circulated in Schools	116.342	175.272
Total Number of Slides lent, including the		
Public Schools	138,133	209,451

* Under the Department of Public Education (see also pages 200 and 201).

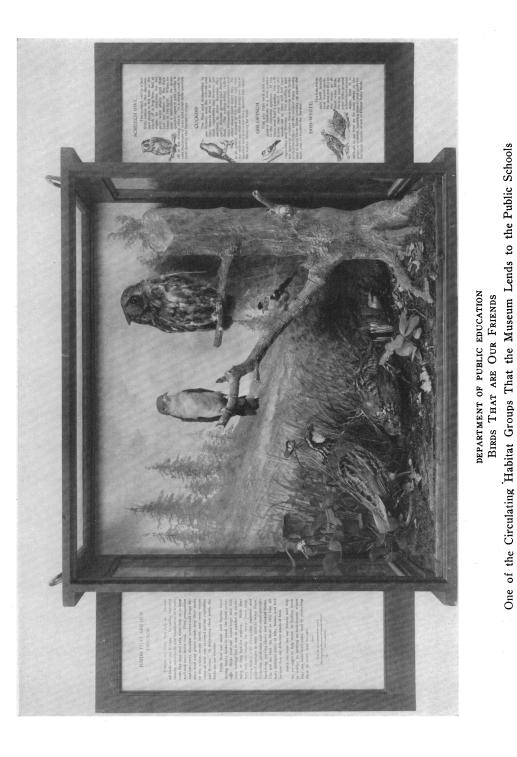
	1920	1921
CIRCULATING COLLECTIONS FOR LIBRARIES: Number of Libraries Supplied Number of Persons Using Collections	18 136,432	17 106,831
EDUCATIONAL WORK FOR THE BLIND: Number of Talks for Blind Children Attendance	117 1,656	125 1,808
TOTAL NUMBER REACHED BY MUSEUM EXTENSION (exclusive of lantern slide service)	1,403,016	1,449,608

A healthy organism must show growth, either along new lines or in the expansion of previous activities.

As a new departure in the circulating collections of natural history specimens, there have been projected some twenty small

habitat groups of birds and other animals for the Circulating purpose of being lent to the schools. These cases Habitat have been suggested by the large habitat groups Groups which have been so popular among the permanent exhibits in the Museum. They are to show the animals in their natural surroundings, utilizing accessories and a painted background, the whole group to be inclosed in glass. Two of these have been finished, and one has been sent to the New York Training School for Teachers, where it is being thoroughly tried out by the student teachers in the Model School. The report of this trial will influence us strongly in the preparation of duplicates of this group and in planning others.

The food exhibits, prepared in conjunction with the Department of Public Health of the Museum, have already proved their value. Since the first of March, Food when they were put into circulation, they have Exhibits been used in thirty-five public schools of New York and studied by 20,600 children. The food models, the wooden percentage blocks, the eight charts and the handbook furnish a vast amount of detailed information. Because the subject matter is specialized in nature, use of the exhibits is confined to certain grades in the schools, and requests are not as frequent for them as for more general collections. Their teaching value is so complete, however, that they are retained for longer periods and studied far more intensively than the others. Although they were designed primarily for the domestic science classes, they are also used in general



health work among the pupils and in the extension work of the Parents' and Teachers' Associations.

During the summer months and at other times when the work with the schools was not interfered with thereby, applications from community houses and other organizations have been filled. Among such institutions are The Federation for Child Study, Teachers College, Child Health Organization, Mulberry Community House, Russell Sage Foundation, Hunter College, Women's Municipal League, and the Board of Education in Brooklyn.

Several requests have been made to purchase duplicate exhibits. Due to the limitation of our own supply (19 as total) and the difficulty of duplicating the material, the Department was unable to fill these requests.

Aside from their general educational value, they have served as an important means of Museum publicity. During the summer and autumn, they were borrowed by several institutions at widely scattered parts of the country and there exhibited during Health Campaigns and similar activities. They have been shown by the New Jersey State Industrial Museum, by the American Red Cross of Chicago, the Department of Hospitals and Dispensaries at Buffalo (during Erie County Health Week), the Cincinnati Health Exposition of Cincinnati, Ohio, and the College of Agriculture of St. Paul, Minnesota.

The close coöperation of the Bureau of Visual Instruction, of the Board of Education, under the direction of Dr. Ernest

Lantern

Slides

L. Crandall, with the lantern slide department of the Museum, is one of the most important features of the work for 1921. The Bureau

deposited a collection of 3,643 slides in the Museum files for circulation in the schools, and seven Museum lecture sets have been duplicated and 137 slides on Domestic Science have been made at the expense of the Bureau. These lecture sets and new slides, selected in coöperation with Dr. Crandall's associate, Miss Rita Hochheimer, are sent to the schools the same as those belonging to the Museum. As rapidly as finances permit, the Bureau of Visual Instruction is purchasing lanterns for the public schools and informing the teachers about the collection of slides which the Museum delivers free of charge to the public schools.

Another important feature of the work is the beginning made in coöperation with the English Department of the New York Training School for Teachers and the Domestic Science teachers of the public schools toward the preparation of slides following an outline of the work in their courses of study. It is hoped that this is a start made in the preparation of a series of "Lantern Slide Handbooks" which will eventually cover the courses of study in the various school subjects, such as Geography, History, Biology, Civics, Domestic Science, and English.

Twice a year, large classes of students are graduated from the New York Training School for Teachers and from the Maxwell (Brooklyn) Training School for The Training Teachers, nearly every member of which goes Schools for directly into the school system of Greater New Teachers York. So, just preceding each commencement, a reception is given at the Museum by the Department of Public Education to the graduating class of each of these schools. The class is given a talk on the Museum's work with the schools and is shown sample lantern slides and two or three reels of educational motion pictures. A tour of the Museum is then made, especially through the Department of Public Education.

The value of these receptions can hardly be overestimated, for they bring to the Museum these student teachers, who are just ready to enter the schools, and familiarize them with our work and with the ease with which this coöperation may be established, and this at the time they are forming their habits of teaching.

The nature study collections, which have been lent to the schools for many years, have reached more pupils during 1921 than during the preceding year. The following statistics show the growth of this work during the past five years:

Lectures	for	School	Children

	1917	1918	1919	1920	1921
Number of Collections in Use	712	629	668	887	869
Number of Schools in Greater New York					
Supplied	446	419	385	448	477
Number of Pupils Studying Collections	1,075,076	790,346	860,992	1,176,055	1,247,515

Many special collections of mounted birds, small mammals, butterflies, moths, beetles, shells, etc., have been lent to the various classes in art and design, which are under the supervision of Dr. James P. Haney. These specimens have been in constant use, and the demand for this material is greater than we have been able to supply.

In 1921, forty-six regular lectures were given for school children in the Museum auditorium, arranged in four courses

Lectures for School Children in the spring and four courses in the autumn. These were planned to supplement the classroom work of the teacher, one course being on the Early History of America, one on the Geo-

graphy and Industries of the United States, one on the Geography of Foreign Countries, and one on Natural History. These lectures are given after school hours, and the attendance is optional.

Besides these lectures of the regular courses, nineteen other lectures were given to school children in the Museum auditorium. Six of these were given during Regents' Weeks to groups of High School students, who came to the Museum not only for the lectures, but also to do laboratory or indoor field work in one or more of the exhibition halls.

During the year the Museum has given lectures to school children in three centers outside the Museum auditorium: one at Washington Irving High School, in coöperation with Miss Florence W. Slater, for the children from the elementary schools of the neighborhood; one at Public School No. 64, Manhattan, in coöperation with Mr. Louis A. Marks, Principal; and one at Public School No. 42, Bronx, in cooperation with Mr. Eugene B. Gartlan, Principal. A summary of the lectures is given in the following table:

Number		endance
Lectures		endance
46	Regular lectures to school children in the Museum Auditorium	23,981
13	Special lectures to school children in the Museum Auditorium	3,228
6	Lectures to High School students during Regents' Weeks in the Museum	3,020
3	Lectures to students from the Training Schools for Teachers in the Museum	461
4	Lectures in cooperation with the School Garden Association in the Museum, by Mr. Van Evrie	101
	Kilpatrick	1,976
5	Lectures to Boy Scouts in the Museum	1,083
i i	Lecture to Private Schools in the Museum	200
5 1 8 8 25	Lectures to Members of the Museum	4,679
ĕ	Lectures to Children of Members of the Museum	9,840
25	Lectures by Teachers in the small lecture halls of	2,010
20	the Museum	1,575
3	Other lectures in the Museum, not listed above	131
10	Lectures at Washington Irving High School	10,700
10	Lectures at P. S. 64, Manhattan	12,600
19	Lectures at P. S. 42, Bronx	7,450
13	Lectures to Schools outside of the Museum, not	,
10	listed above	7,835
6	Lectures at Fox Hills Hospital	4,250
1 1	Lecture at New York Botanical Garden	150
i	Lecture before Parents' and Teachers' Association	300
186	Total attendance	93,459

The attendance at the lectures to school children given in the Museum was lower than usual. This was without doubt due largely to the great amount of time spent by the schools during the autumn upon the America's Making Pageant.

Acknowledgment should be made here to the generous help in the lecture work that was given by various members of other departments of the Museum.

The most striking growth in any activity of the Department was in the loan of lantern slides to the Lenging of public schools. This is graphically shown in the following table of comparative statistics:

	1919	1920	1921
Total Number of Borrowers	164	235	295
Total Number of Loans	1.470	2.435	3.963
Total Number of Slides Lent	80.468	138,133	209,451
Number of Public Schools Borrowing	92	154	182
Number of Loans to Public Schools	1.032	1.933	3.187
Number of Slides lent to Public Schools	58,107	116.342	175.272
Number of Shues felle to I ablie Schools	00,107		

This growth is significant, as it emphasizes the great importance of visual instruction as a method of education.

The lending of lantern slides is under the immediate direction of Mrs. Grace Fisher Ramsey.

There has been a substantial increase in the work with the blind and sight conservation classes. During the year there

Work with the Blind have been given in the Museum 125 talks to these classes. These talks or lessons are always illustrated by specimens or apparatus that can be handled by the pupils. In addition to these regular scheduled talks, two classes from the New York Institute for the Blind have visited the Museum for special study in zoölogy and physical geography. On March 28, the troop of blind Girl Scouts met in the Museum, and as an incentive to work for the honor badge of Zoölogist, Miss Crosby gave them a talk on the more common animals, illustrated by living and mounted animals, as well as models.

Both in the classes in the Public Schools and in the New York Institute for the Blind, the children have opportunity of studying natural history specimens lent by the Museum. An extensive collection of material has been placed in the Nature Room of the New York Guild for the Blind. Fifteen of the regular sight conservation classes are now provided with large relief globes furnished by the Museum.

This work is made possible through the Jonathan Thorne Memorial Fund, and is under the immediate direction of Mrs. Ruth Crosby Noble.

The coöperation with the Public Libraries has been continued throughout the year. Twenty-two collections of zoölogical, geographical and historical material were circulated among sixteen branch libraries, sixty-seven loans being made, an increase of 18 loans over 1920.

Guides for teachers and classes and for Members of the Museum and their friends have been provided whenever re-

Docent Service quested during the year, and these calls have been numerous, thus requiring much time on the part of the members of the staff. This service has been extended very widely, guides being furnished to any school, whether public, private or parochial, and whether the school was located within New York City or beyond its limits. Also guides were furnished for groups from various clubs and other organizations. On several occasions, such as the visit of several hundred crippled children on June 7, other members of the Scientific Staff have kindly helped us in conducting parties through the exhibition halls.

Early in 1921, the photograph albums for the use of the public were moved to new cases in the negative room, thus centralizing the work of the photographic department and supplying a photograph room similar to the slide room.

The largest piece of work accomplished during the year and one of the most important was the grouping, captioning and cataloguing of more than 2,300 negatives made by Dr. Frank M. Chapman on his expeditions to Mexico, the West Indies, South America, Canada, and western and southern United States.

For exhibition at the Second International Congress of Eugenics held at the Museum in September, 219 prints and 143 enlargements were prepared, and 101 negatives and prints were made of the exhibition itself.

During the year the photographic department has made 4,694 lantern slides for use in schools and colleges in all parts of the world.

The School Nature League, under the leadership of Mrs. John I. Northrop, we believe is doing a most important work

Contact with Outside Agencies in connection with its various Nature Rooms, and during the year the Museum has coöperated with this organization in every way possible, especially by furnishing the auditorium for large public meetings and by the lending of natural history specimens.

During the past few years considerable work has been done with the Boy Scouts and similar organizations, especially through the efforts of Mr. B. T. B. Hyde, who has given unsparingly of his time to this work, both in the Museum and in the field. Docent service has been supplied to visiting troops and occasional talks to Scouts and Scout Masters have been given in the small lecture halls.

Last spring in order to increase our usefulness to these organizations, a course of five lectures to Boy Scouts, at the suggestion of Mr. Hyde, was given in the large auditorium.



DEPARTMENT OF PUBLIC EDUCATION PRIZE-WINNING EXHIBIT

The exhibit of the Jamaica High School at the Autumn Flower Show of the New York City High Schools held at the American Museum of Natural History, September 30 to October 2, 1921

These were attended by Scouts from Greater New York and vicinity.

Dr. Fisher continues as Bird Examiner for the Boy Scouts of Manhattan, that is, he examines the candidates for the Bird Study Merit Badge.

In the spring, shortly after the death of our great literary naturalist, Dr. Fisher gave his lecture, "With John Burroughs in His Favorite Haunts," in the Museum auditorium for the members of the Woodcraft League.

At the Annual Camp Directors' Conference held in May at Camp Dudley on Lake Champlain under the auspices of the Woodcraft League, Dr. Fisher conducted work on trees, flowers, and birds.

During July and August, Dr. Fisher conducted nature study in Camp Wigwam, a summer camp for boys near Harrison, Maine.

During the summer Dr. Fisher edited the two nature volumes of The Father and Son Library, published by The University Society.

Dr. Fisher has served on the following committees: America's Making Pageant, Curriculum Committee of the Visual Instruction Association of New York City, Biology Committee of the Bureau of Visual Instruction of the Board of Education.

Besides the acknowledgments listed in the accessions of the Department, the following deserve our best thanks: The

Acknowledgments New York State Conservation Commission for the use of motion picture films on forestry in our lectures to the children of the public schools:

Commander Henry D. Cooke and Lieutenant-Commander Norman Van der Veer of the United States Navy Recruiting Bureau, for the loan of motion picture films for school lectures; and The Carter Cinema for the loan of motion picture films used at a meeting of the School Nature League.

The greatest need of the Department is adequate quarters

Greatest Need for carrying on the work, and this need promises early fulfilment in the proposed School Service Building, a commodious structure of four stories, which will give ample space for present activities and room for growth.

GEOLOGY, GEOGRAPHY AND PAST LIFE OF THE EARTH*

EDMUND OTIS HOVEY, Curator

Noteworthy progress has been made in the reinstallation of the exhibition hall. The topo-geological models of the Mt. Tom-Mt. Holyoke Range region in Massachu-Exhibition setts. the White Mountain region in New Hall Hampshire, the Standing Stone region in Tennessee, and the Watkins Glen region in New York, have been completed and installed and show how attractive this feature of the hall will be. In the first three of these models, the geology of the districts concerned has been indicated with representations of the actual rocks occurring therein. The effect is a pleasing departure from the conventional and staring contrasts of the ordinary geological map. The Watkins Glen region has been treated to show glacial geology, and the edge of the retreating ice sheet has been introduced to render the geology itself more intelligible to the lay visitor. Morgan Brothers are installing the model of Porto Rico, the Virgin Islands and the great ocean deeps adjoining. This model is at the south entrance to the hall opposite the Grand Canyon model and forms a striking contrast to it. The Yosemite Valley core was completed early in the year, and much progress has been made on those for the San Francisco Bay and Crater Lake regions.

Under Dr. Reeds, the work on the historical and biologic series has gone forward, Mr. Foyles having been engaged on the former, and Dr. H. N. Coryell, an expert on fossil bryozoa, having devoted some time to the latter. Mr. Foyles has revised the preliminary arrangement of the geological periods (Ordovician to Pennsylvanian inclusive) as far as cases and catalogued material would permit.

^{*} Under the Department of Geology and Invertebrate Palæontology (see also pages 201 and 202).

Miss Marks has continued the accessioning and has entered seventy-one lots of material as having been received. About one-fifth of her time has been occupied with Labeling and preparing the typewritten labels for the strati-Catalogue Work graphic exhibition series. Under the Curator's supervision, Mr. Tyson has catalogued some hundreds of department photographs and has put the new numbers on the irons of the meteorite collection. Miss Anna H. Greene, under the direction of the Associate Curator, has carded the revised nomenclature of our Bryozoa according to Dr. J. J. Galloway and incorporated reference data supplied by Dr. Coryell, also that of the fossil plant exhibit prepared by Dr. Arthur Hollick. She has also numbered and catalogued the Florissant type series of specimens and has performed other similar work.

Dr. Reeds has prepared three articles: "The Pueblo Floods," "The Movement of Glaciers in Sweden and Publication Alaska," which appeared in the June number and Research of Natural History, and "The Geology of New York and Vicinity" for the same journal. From the latter part of October on, Dr. Reeds was engaged on his part of the preparation of a joint paper with President Osborn, entitled "Old and New Standards of Pleistocene Division in Relation to the Prehistory of Man in Europe," for presentation before the Geological Society of America. He also prepared a paper on "Transgressions, Regressions and Change of Sea Level during the Pleistocene," which he read before the same Society. Mr. Foyles has prepared and published in Novitates a paper entitled "The Geology of the Northeast Quarter of the Monticello Quadrangle, Wavne Co., Kentucky."

Dr. Reeds, accompanied by Mr. Hill, spent about a month collecting specimens and making studies of certain Helderbergian localities in New York, New Jersey and Pennsylvania. Excellent exhibition material resulted from this work. Mr. Foyles made a reconnaissance of the historic area about Fort Cassin, Vermont, with reference to the task of making an intimate study of it. Dr. Hovey continued to serve as the Secretary of the Geological Society of America and attended its annual meeting,

held at Amherst, Massachusetts, in December. Scientific Societies and Conventions He was one of the Museum's representatives at the annual meeting of the American Association of Museums in May, in Cleveland, Ohio.

Dr. Reeds has been the Secretary of the Faculty of the Museum and Secretary of the Section of Geology and Mineralogy of the New York Academy of Sciences. He attended the meeting of the Geological Society of America, in Amherst, where he read papers by President Osborn and himself.

The seismograph, which was presented to the New York Academy of Sciences by Mr. Emerson McMillin and deposited here by the New York Academy of Sciences, has continued to be under the care of Dr. Reeds. The earthquakes registered this year have been few as compared with previous years. During the early part of the year, Dr. Reeds reviewed the recent literature on seismology, and Miss Greene brought the cataloguing of the records up to the year 1917. The numerous inquiries as to earthquakes show the continuance of public interest in the subject.

Among accessions, mention may be made of a series of ammonites and other fossils from the Province of Tarapaca, Chile, through Señor Recaredo Amengual, Intendente of the province; the stump of a giant tree fern from the Hamilton sandstone, Gilboa, New York, through the New York City Board of Water Supply, J. Waldo Smith, chief engineer; a 93-gram slice of the rare Warialda, Australia, iron meteorite through George W. Card, Curator of the Mining Museum, Sydney, N. S. W.

Noteworthy additions to our meteorite collection have been made through purchase, as follows: a 236-gram slice of the Mt. Ayliff, South Africa, iron; a 76.5-gram slice of the Rodeo, Durango, Mexico, iron; a 333-gram fragment with crust of the Vigarano Piave aërolite from near Ferrara, Italy; an 8.8-gram bit of the Alessandria, Valley of San Guiliano, Italy, aërolite. Through Museum expeditions, we have received considerable additions to our series of Helderbergian fossils from important localities in New York, New Jersey and Pennsylvania, collected by C. A. Reeds and P. B. Hill; a series of Beekmantown fossils from Vermont, collected by E. J. Foyles; important series of fossils from the Isle of Wight, Egypt, Abyssinia and Asia Minor, collected by Barnum Brown.

MINERALS AND GEMS*

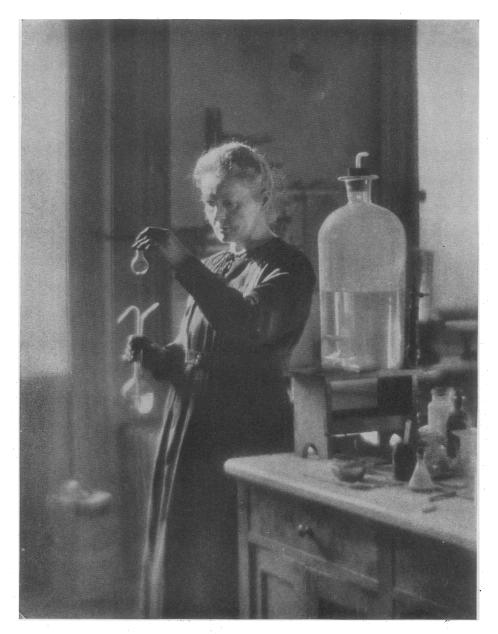
HERBERT P. WHITLOCK, Curator

Through the generosity of Mr. George F. Baker, who has chosen this highly fitting means of honoring the memory of his friend and associate the late Mr. J. Pierpont Morgan, the Mineral Hall has been completely remodeled architecturally and will henceforth be

Minerals designated as the Morgan Memorial Hall of and Gems Minerals and Gems. The work, which includes a groined arch treatment of the ceiling, the encasing of the columns in marble, thus converting them into piers, and the closing of the lower portions of the windows on the south side, has resulted in an increased dignity and attractiveness, which, added to the better disposition of the lighting, now renders this hall the most effective display space in the Museum.

The additional wall cases, installed along the south wall, provide case room for the display of the large and striking specimens, which were formerly shown in a series of low free-standing cases, arranged in the central axis of the hall. This change admits of the more effective display of these specimens and permits the utilization of the middle section of the hall for the display of the Morgan Gem Collection which formerly occupied the west corridor, thus admitting of a better lighting of this collection and placing it in better and more logical relation to the Mineral collection. The scheme of rearrangement includes the substitution of a new type of high, free-standing case adjacent to the piers, thus breaking the monotony of the large series of desk cases in the main installation and producing an alcove effect at once pleasing and interesting. This latter type of case, by providing more shelf room per unit of floor space, increases the display capacity of the space devoted to the General Collection. Three marble tablets, one set in the middle of the south wall, the other two between the middle windows of

^{*} Under the Department of Mineralogy (see also pages 202 and 203).



MADAME MARIE SKLODOWSKA CURIE Co-DISCOVERER OF RADIUM Elected Honorary Fellow of The American Museum of Natural History, April 20, 1921 the north wall, are inscribed to indicate the presentation of the Morgan Hall by Mr. Baker in memory of his friend Mr. Morgan, and with the names of donors of mineral and gem specimens which have materially enhanced the collections.

The occasion of the reception tendered to Madame Curie at the Museum was marked by a temporary exhibit of the

Special sources of radium and its utilization in surgery. The Department contributed to this exhibit specimens of radioactive minerals. In many instances these were accompanied with a radiograph showing the action of the specific mineral upon a photographic plate. This installation, which was on exhibition for three months in the Southwest Wing of the first floor, aroused much popular interest.

During the Summer Session at Columbia University, the Curator delivered a course of lectures and conducted con-

Extension Work ferences on Gems and Gem Minerals; the conference hours were held in the Morgan Hall of Gems. The lantern slides illustrating these lectures were made largely from specimens in the Tiffany Collection, presented by Mr. Morgan, and are now available for subsequent popular lectures on Gems.

The research laboratory has added to its equipment a Leitz Petrographic Microscope, Model C. M., for the determination

Research of minerals in minute crushed fragments. Work upon a crystallographic atlas of the Mineral Collection was begun in the summer with a detailed study of several occurrences in the division of the metallic sulphides. Satisfactory crystallographic measurements were made on a number of highly interesting specimens in the pyrite series, resulting in the discovery of several new forms.

Notable among the gifts to the Mineral Collection are a very complete series of the copper minerals from the Braden

Accessions Mines at Rancagua, Chile, and a fine suite of the copper and iron sulphides from Chuquicamata, Chile, presented by Mr. Harry F. Guggenheim. The first of these donations is important in that it represents the mineral phases of the Rancagua deposit by genetic zones in great detail and completeness, and it is also rich in fine specimens of

the relatively rare copper arsenate chalcophyllite. The Chuquicamata series contains much material of high scientific interest. Through the gift of Mr. W. Spencer Hutchinson, the collection has acquired typical specimens of hewettite and pascoite from Mina Ragra, Peru. Mr. Breck Trowbridge has contributed an unusual specimen of brucite from a Manhattan Island locality. The Gem Collection has been enriched through the gift by Mr. Charles Lanier of the exquisite chalcedony figurine "Pas de Danse" by M. Tonnelier, which was formerly deposited by him as a loan to the Collection. This statuette, which was acquired by Mr. Morgan and given by him to Mr. Lanier, represents the highest expression of the art of the gem engraver and will occupy the place of honor in the new installation of the Gem Collection. Another notable addition to the Gem Collection is the pendent necklace assemblage of aquamarines, diamonds, sapphires and garnets which constitutes the official trapping of a Vizier of Morocco of the eighteenth century and which was acquired through the gift of Mr. M. L. Morgenthau. Through the Matilda W. Bruce Fund the Mineral Collection has acquired a number of rare and important mineral occurrences from Hungary, Bohemia, Czechoslovakia and Austria.

LOWER INVERTEBRATES*

HENRY E. CRAMPTON, Honorary Curator Roy Waldo Miner, Associate Curator in Charge

At the beginning of the year, the Department of Invertebrate Zoölogy was divided into two departments, the Department of Lower Invertebrates and the De-Reorganizapartment of Entomology. This change was a tion and Changes in logical one, due to the growth of the original Staff department and to the natural cleavage between the subject matter and technique of the insects on the one hand and the lower invertebrates on the other. The former Curator, Professor Henry E. Crampton, was made Honorary Curator of Lower Invertebrates, with Roy W. Miner as Associate Curator in Charge, while Doctor Frank E. Lutz was promoted to the Curatorship of Entomology. Dr. Willard G. Van Name was promoted from the grade of Assistant to that of Assistant Curator. Professor A. L. Treadwell was retained as Research Associate in Annulata and Mr. Frank I. Myers as Research Associate in Rotifera.

There has been noteworthy progress in exhibition during the year. The work naturally falls under two main headings: The Darwin Hall and the Hall of Mollusks.

Most of the items for the Gay Head Sound-Bottom Group have been completed in the modeling room, and the group

Darwin Hall is now in the Darwin Hall for assemblage and installation. The work has involved the construction of many parts in glass, celluloid and

wax to represent the algæ and invertebrate life at the bottom of Vineyard Sound, Massachusetts, centering about the Crustacea. In the case of the latter, original specimens have been carefully articulated, mounted and colored from life. The glass modeling, as usual, is due to the excellent skill of Mr. Herman O. Mueller, while the modeling in plaster, wax and celluloid is that of Mr. Chris E. Olsen. Mr. W. H. Southwick has nearly completed the coloring of the transparent backgrounds, with very creditable results.

^{*} Under the Department of Lower Invertebrates (see also pages 203 to 205).

Excellent progress has been made in the delicate and difficult modeling of the parts of the complicated Rotifer Group, by Mr. Mueller, Mr. Olsen and Mr. Southwick, under the supervision of Mr. Miner, with the invaluable coöperation and advice of Mr. Myers. This group, as reported last year, will be a companion piece to the Bryozoa Group, and will be installed in a similar case. The microscopic fresh-water Rotifers which will be represented are highly magnified, have considerable complexity of structure and require much preliminary research in the field and with the microscope. The assistance of Mr. Myers, and his accurate knowledge of these forms, have been indispensable in this respect, while Mr. Mueller's careful manipulation of the complicated glass models is worthy of especial note.

The original material for the exhibit showing variation within the species was donated by Professor C. B. Davenport of the Carnegie Laboratory at Cold Spring Harbor, L. I., and has been a provisional exhibition in the Darwin Hall for some time. During the past year, this has been rearranged and remounted on a chart, which in its completed form gives a striking illustration of natural oscillation about the norm of the species, as illustrated by a pailful of scallops (*Pecten*) picked up at random on the beach.

Three individual models of Rotifers have been prepared for the synoptic series, to show, greatly enlarged, characteristic features of the anatomy and the feeding adaptations of certain species. A series of models for an exhibit illustrating the Phylogeny of the Animal Kingdom, with special reference to the origin of the mammalian stem, has been prepared for installation in the Synoptic Hall of Mammals and is now practically complete.

As in former years, the Darwin Hall has been extensively used by teachers and classes from the public schools, high

Educational Work in the Darwin Hall schools and colleges of Greater New York and its surroundings. The total number of pupils visiting the hall in this way during 1921 for purposes of study was 17,845, of which 15,789 were public school pupils, 1,558 came from pri-

vate and parochial schools, and 498 from colleges and universities. The exhibits in the Hall of Mollusks have been kept in excellent condition through the services of Mr. E. H. Gügelmann. There have been no additions to the display cases during the year, but the exhibits in

Mollusks play cases during the year, but the exhibits in several of the wall cases have been cleaned and rearranged. The hall has been utilized by many inquirers seeking to study the shells or identify specimens from those on exhibition. On account of the arrangement of the collection, this is readily possible for the average visitor without disturbing the specimens. When more careful study is required, the visitor is referred to the study collection, which is utilized under guidance.

The general invertebrate collections have been under the **General In**erit efficient supervision of Dr. W. G. Van Name. **Vertebrate** The identification, cataloguing and rearrange- **Collection** ment of the echinoderm collections were completed. This important work, begun in the autumn of 1920, occupied the first three months of 1921.

The Rotifer Collection was completely revised and catalogued, including the recent donations of Mr. Myers.

The invertebrates collected by the Albatross Expedition of 1911, which were turned over to our department in 1920, were separated and classified and various lots shipped to specialists for identification.

Many smaller accessions were separated and classified, especially those received from Mr. Barnum Brown from Abyssinia and Asia Minor.

The extensive series of invertebrates obtained by the Belgian Congo Expedition were gone over and a series of duplicates made ready for shipment to the Belgian Government, of those portions covering which publications have appeared. The series includes 788 specimens from 99 species of Crustacea, Echinoderms and Land Mollusks.

Many requested identifications of collections have been made. This is a time-consuming matter, but one that has been cheerfully undertaken to further the public usefulness of the Museum.

The classified lists of the various phyla have been revised and brought up to date.

During the year the following have been catalogued: The Tomlin Collection, the marine Gastropods of the Steward Collection, the Achatinellid Collection, the Mollusk Achatinellids and other Hawaiian shells re-Collections ceived in exchange from Dr. C. Montague Cooke, and the Oldroyd Collection. Through the courtesy of Dr. C. Montague Cooke, the entire Museum collection of Hawaiian Achatinellid shells was reidentified and revised, and many gaps were filled by exchange. This time-consuming process has proceeded most satisfactorily. The large Steward Collection was removed from the Mineral Hall and arranged in its proper place in the collection, and the Belgian Congo land shells, as well as several smaller collections, were distributed into the series.

Dr. Crampton returned from his sixth trip in Pacific regions, in the latter part of February. Through his efforts, the Museum is enriched by a large num-Field ber of specimens representative of the fauna of Work the Mariana Islands, Manila, China, Siam, the Malay Peninsula, the Dutch East Indies and Australia. He was able to secure for purposes of research nearly 10,000 specimens of snails of the Genus Partula, alone, from more than forty localities in Guam and Saipan of the Mariana Islands. Professor Crampton brought back 60 vials of Myriapods, miscellaneous land shells, worms and isopods, as well as numerous marine shells. He also secured 3,000 dried insect specimens, about 40 specimens of reptiles and amphibians, a number of items of ethnological interest, and some geological specimens from Australia.

During September, Mr. Miner visited Mount Desert Island, Maine, where, through the courtesy of Director Ulric Dahlgren and his associates of the Harpswell Laboratory, a preliminary examination of the coastal invertebrate fauna of the region was made. Through the coöperation of Professor Dahlgren and Mr. William Procter, ten localities were visited on the island and collections were obtained in each with appropriate data, while numerous photographs were secured. Cordial relations were established with the laboratory officials, and preliminary arrangements made for future ecological work and for securing data for proposed exhibits for the Museum. With the aid of maps and other information secured by the courtesy of Mr. George B. Dorr, a trip was made through the mountains of the Mount Desert National Park, a region maintained in forested condition, with many lakes and streams in which fresh-water invertebrates are abundant.

During the latter part of the month, Mr. Miner spent several days at the Marine Biological Laboratory at Woods Hole, Massachusetts, in company with Mr. W. H. Southwick as artist, where through the courtesy of Director Frank R. Lillie, and Assistant Director Gilman A. Drew, they secured sketches and observations to be utilized in completing the Gay Head Sound-Bottom Group for the Darwin Hall.

During the past year, Mr. Miner has devoted much time to the preparation of a text-book entitled "Animal Life and Its Evolution," which presents a survey of the Research and animal kingdom with especial reference to the Publication relationships of the main groups, from an evolutionary standpoint. Illustrations are drawn largely from exhibits in the Darwin Hall and elsewhere in the Museum. The book is adapted to upper high school and college classes and for the use of teachers of biology. It is drawn up with especial reference to a series of twelve charts in color, based upon Museum exhibits and reproduced from photographs skilfully colored by Mr. William E. Belanske under Mr. Miner's direction. The production of both text-book and charts has required much care and thought. It is intended to supplement these with a more popular handbook and guide to the Darwin Hall. All three publications may be used in conjunction or independently, and are designed to facilitate the full utilization of the educational possibilities of the Darwin Hall.

Mr. Miner has also partially completed a study of the phylogeny of the arm muscles of certain lower vertebrates, through the coöperation of the Department of Comparative Anatomy, as a preliminary step to a future comparison with the fundamental musculature of invertebrate types. Two short papers are also being prepared on Myriapods and Cephalopods, respectively.

Doctor Van Name has been engaged on a paper dealing with the "Isopods of the West Indies Region," which he expects to complete during the coming year.

During the year, two papers by Dr. W. G. Van Name, and one by Mr. Paul S. Welch, were published in the Museum Bulletin.

A popular article entitled "A Journey to the Mariana Islands—Guam and Saipan" was published by Professor Crampton in the March-April number of *Natural History*, illustrated by a series of excellent photographs.

Progress has been made upon papers by W. L. Schmitt, M. A. Pilsbry, Paul Bartsch, A. L. Treadwell, Ralph V. Chamberlain, and J. P. Moore.

Research Associate Frank J. Myers has continued to en-

Important Accessions

large our Rotifer collections during the past year, and in addition has donated to the department a fine Watson microscope with complete

equipment for high-power work. He has also donated a second slide cabinet for the protozoan collections.

INSECTS AND SPIDERS*

FRANK E. LUTZ, Curator

An automobile especially equipped for field work on insects and spiders has been one of our evident needs for several years. That need was filled this year through the generosity of friends contributing to the Entomological Fund, and the machine was given a test in a special study of the pine barrens of southern New Jersey by Curator Lutz. It is planned to use it in 1922 for a continuation of the survey west of the 100th meridian. The automobile has an "express" body fitted with removable bunks and lockers for apparatus, specimens, and camp equipment.

The pine barrens offer very interesting problems in the geographic distribution of species and in the relations of animals to the apparently extreme environmental conditions found in the cold sphagnum bogs and the torrid stretches of open sand. Strangely enough, some of the most northern species there are found on the dryest and hottest of sandy areas.

Mr. Watson, Assistant in Lepidoptera, left early in December for extended work in Haiti. This expedition is made possible by the generosity of Mr. B. Preston Clark and is in continuation of previous work on the insects and spiders of the West Indies. Haiti is particularly interesting because it contains large areas of wild land that have not been explored entomologically. Mr. Watson's work will help to fill the gap between comparatively well-known Cuba, and Porto Rico, the island which we studied recently in connection with the N. Y. Academy of Science's survey.

Entomologists are fortunate in having a wealth of fascinating material at their very doors. The Curator once made an off-hand statement that at least five hundred different species of insects are to be found in a suburban yard. The statement was challenged, and the Cu-

^{*} Under the Department of Entomology (see also pages 205 to 207).

rator set about proving his point. That proof is being exhibited under the title "Some of the Insects of a Suburban Yard."

Progress with the habitat groups of insects has been slow because of congestion in the Department of Preparation and the lack of suitable cases. The unique exhibition series showing spider-webs in three dimensions has been lost because of the lack of suitable cases to contain it.

One pleasant feature of the year's work has been the association in the field with groups from such organizations as

the Boy Scouts, Girl Scouts, and the Woodcraft Personal Contact with groups in the Palisades Interstate Fark and elsewhere and personally to point out some of the interesting and instructive features of living insects and spiders.

Contact by correspondence and by interviews in the office continues to occupy a great deal of the staff's time. An account has been kept of the questions answered in this way and we plan to prepare a leaflet dealing with these specific questions. It is to be regretted that a large proportion of such inquiries concern the possibility of making money by collecting insects. Such possibility is very small and the one who looks at insects through a dollar is sure to miss much.

The only technical papers actually published from this department in 1921 are "Geographic Average, a Suggested Method for the Study of Distribution." by Publication Frank E. Lutz (American Museum Novitates. No. 5), and three reports (American Museum Novitates, Nos. 21, 23, and 24) by T. D. A. Cockerell on "cuckoo" bees collected by the department's survey west of the 100th meridian. Of the 85 species listed in Professor Cockerell's reports. 34 are new to science. A treatise of more than a thousand printed pages on Congo ants, by William M. Wheeler, J. Bequaert, I. W. Bailey, F. Santschi and W. M. Mann, is in press, and several other large papers, including one on West Indian fire-flies, by C. W. Leng and A. J. Mutchler, are practically ready for press. A number of popular articles have been published, and the "Field Book of Insects" by Frank E. Lutz has been revised and enlarged.

The study collections have never been in better condition. Thanks to the skill and faithfulness of our preparator, Mr.

Study Collections Wunder, all but the most recent accessions are mounted and labeled. The enormous but important task of rearranging the collections so that we may have an identification series separate from the general series is making progress, especially in beetles under the care of Mr. Mutchler. The collection of wild bees from foreign lands has been increased by the purchase of more than two thousand species, authentically named and including much type material. Almost without exception, these species are new to our collection, and many of them are not represented elsewhere in the United States.

Following the discovery of the apparent advantage to many plants in having insects transfer pollen from one flower

Flowers and Insects to another, it seemed clear that flowers had become conspicuous in color and odor in order to

serve as signals, or even as actual attractions, to pollenating insects. Many papers have been written on the subject but, unfortunately, accurate physical and chemical data are lacking. The National Research Council has appointed a committee, of which Curator Lutz is chairman, to investigate some of the problems anew for the purpose of securing such data. In addition to other plans, it is proposed to do field work during 1922, with Boulder, Colorado, as headquarters. This investigation is all the more interesting because certain recent work has indicated that insects are color-blind. If they are, the function of colors in flowers is not evident.

RECENT AND EXTINCT FISHES*

BASHFORD DEAN, Honorary Curator

JOHN T. NICHOLS, Associate Curator of Recent Fishes, in Charge

The model of a large Hammerhead Shark has been prepared by Mr. J. C. Bell from exhibition material secured at **Exhibition** Morehead City, N. C., in 1920. In view of the small amount of exhibition space available and the many other demands on Mr. Bell's time, progress on preparation of other of this material is delayed.

An "Angler's Collection" of game fishes has been installed on the third floor near the elevator. The most desirable members of a collection of personally taken mounted fishes, gathered by Mr. Jacob Wertheim, and generously presented to the Museum by Mrs. Wertheim on his death, formed the basis for such a collection. These include a large tuna from the New Jersey coast. A cast of a large salmon, presented by Dr. L. C. Sanford, and the skin of a Red Drum obtained by purchase, and now in the hands of the preparators, also deserve mention. This red phase of the Sea Drum is not well understood. It is not the Channel Bass (*Scianops ocellatus*), sometimes called "Red Drum."

Two instalments of fresh-water fishes from China have been received, incident to the work of the American Mu-

New Material seum's Third Asiatic Expedition now operating there, one collected by Mr. Harry R. Caldwell, the other by Mr. Clifford H. Pope. They are well preserved, and with future such shipments, expected, should form a basis for the first comprehensive study of Chinese freshwater fishes ever made. Chancellor David Starr Jordan of Stanford University has made a collection of marine fishes in the Hawaiian Islands for the department. In despite of extensive work already carried out in that locality, the great richness of its fish life is attested by previously unknown forms which still are found there.

^{*} Under the Department of Ichthyology (see also pages 207 and 208).

The Associate Curator made a short field trip to Florida, and Nassau, Bahamas, in February, with the twofold object of establishing friendly relations with the recently opened Miami Aquarium, and of obtaining certain data and material for a paper on the genus *Caranx*, in hand,—"Species of Northwest Atlantic *Caranx*," later published in the Abstract of the Annual Meeting of the American Society of Ichthyologists and Herpetologists.

Mr. Tee Van of the New York Zoölogical Society has been working on the classification of British Guiana fishes, ob-

Care and Study of Alcoholic Collections tained by the Society, which are to be deposited with this Department. Mr. Henry W. Fowler of the Academy of Natural Sciences, Philadelphia, has about completed the classification of a collection of fresh-water fishes from North Caro-

lina, obtained by Mr. E. R. Dunn several years ago. In return for his services the Academy is to retain the first series of duplicates.

It has been necessary to repair the large metal tanks used for storage of alcoholic material. Mr. Fred Kessler, the laboratory assistant, has been occupied largely with the necessary routine care of the collections, and the preparation of fishes to augment the growing series of skeletal material, which becomes increasingly useful for reference.

Incident to cataloguing the study collections, two notices have been published in *Novitates* and one in the *Bulletin*, wherein three new fishes from the Bahamas and one from the Hawaiian Islands are described.

Work on the "Bibliography of Fishes" has gone steadily forward during the year despite serious handicaps. Owing to a printers' strike in Cambridge, Massachusetts, no proof was received between March 15 and December 9.

As to progress, all addenda are in type and will be printed in January as part of Volume III, amounting to 350 pages. Of the Subject Index, the sections on Fauna of the World, Palæontology, Physiology and Reproduction are in type. Nearly as much more copy is in the hands of the printer.

Dr. E. W. Gudger and Mr. Arthur W. Henn have arranged

and almost completed the general Subject Index cards. There is left only the section on Genera of Fishes, and it is believed that this will not offer the difficulties attending the preparation of the sections cited above. It is confidently asserted that the end of this great work is in sight.

"What Sharks Really Eat," in the May-June number of *Natural History*, presents in popular form observations made by J. C. Bell in 1920, reported on in more technical detail by J. C. Bell and J. T. Nichols in the March number of *Copeia*. A second article in the July-August *Natural History*, "The Miami Aquarium," reviews the scope of that new institution and possibilities of coöperation between it and the American Museum of Natural History.

Among other publications by members of the department staff, is "Notes on the Morphology and Habits of the Nurse Shark, *Ginglymostoma cirratum*" (*Copeia*), by Dr. E. W. Gudger.



DEPARTMENT OF HERPETOLOGY THE MARSUPIAL FROG Secured in the Andes of northern South America

EXISTING REPTILES AND AMPHIBIANS* G. K. Noble, Assistant Curator, in Charge

Stress was laid during the year 1921 chiefly on the study of accumulated collections. As a result, those investigations which have been in hand for some time were brought to completion, leaving the Department free to formulate new policies and plans for future exploration and research.

Although no field work was undertaken during 1921 by any Department member, save for a number of short trips into the local field, the herpetological collections Additions have continued to grow. Expeditions sent out to the Collection by other departments have secured valuable herpetological material, including several new species. Mention may be made of the 330 specimens secured by Mr. Beck. of the Whitney South Sea Expedition. in Polynesia. the 81 reptiles and amphibians collected by Mr. Anthony in Ecuador, and the 30 specimens collected by Dr. Crampton in Siam and the Orient. The largest single collection received from an expedition is that of the 428 amphibians and 163 reptiles obtained by the Third Asiatic Expedition.

The total number of reptiles and amphibians accessioned this year amount to 6,125 specimens. The greater number of these were received through purchase. Among the rare species secured in this way were three specimens of the African shell-less tortoise, *Testudo loveridgü*, and a large series of *Ascaphus*, the only Bell Toad in North America. The latter has proved very interesting structurally, approaching in its appendicular musculature very close to the salamander type.

The cordial relations existing between the Department and similar departments in other museums have been strengthened. No less than 1,349 specimens were received in exchange during 1921. This material comes from The Albany Museum, Grahamstown, South Africa, The Australian Museum, The California Academy of Sciences, The Museum

^{*} Under the Department of Herpetology (see also pages 208 to 210).

of Comparative Zoölogy at Harvard, The Museum of Zoölogy of the University of Michigan, and from The British Museum (Natural History).

There were received as gifts 922 specimens. A number of these sent from F. M. Graf, San Bernardino, California, were mounted and have been placed on exhibition. Local naturalists interested in our survey of the reptiles and amphibians of our vicinity have added 144 specimens to our series.

The total number of catalogued specimens in the collection is now 14,550 amphibians and 21,200 reptiles. Including the uncatalogued specimens, the collection contains over 40,000 specimens. These figures seem especially significant when it is recalled that the Department did not come into existence until 1909, and at that time its collections included only a little over 6,000 specimens.

Radical measures were taken this year to relieve the congestion in the study collections. Some space and glassware

were made available by separating all specimens Care of without data from the main collection. But it Collections was not until part of an additional storage room was remodeled and turned over to the Department that sufficient space became available for a much needed rearrangement. The preparation of a complete reference catalogue to the study collections continued throughout the year. Miss Barnett continued the transference of data from the old card catalogue to the new catalogue books. Mr. Schmidt has devoted much time and thought to the remodeling of our entire storage collection. The system adopted combines the best devices utilized in other museums, and, when completed, will make our study collection one of the most accessible in the country.

Routine work has absorbed much of the time of all members of the Department. The completion of the several reports, especially those dealing with the Lower Californian collections, has involved the return of a large amount of study material which had been borrowed in former years. The accessioning, cataloguing, identifying, and labeling of incoming material have required an equal amount of time and care. Extensive changes were made this year in the exhibitions of reptiles and amphibians. The addition of two large cases,

Exhibition one for Crocodiles and the other for Alligators and Caimans, necessitated the rearrangement of the floor cases. The two large Crocodilians, formerly stored on the fifth floor, were remodeled and placed on exhibition. A splendid example of the Chinese Alligator and an immature specimen of *Caiman sclerops* were added to the Alligator case.

An exhibit of reptiles and amphibians found within fifty miles of New York City was inaugurated late in the season. The case now includes twenty-nine specimens. This is only a beginning. We hope to have the entire fauna represented by the end of next year. In conjunction with this exhibit, steps have been taken to prepare a handbook of the reptiles and amphibians of our region.

Among the noteworthy exhibits prepared during the year was a small group of *Ascaphus*, the only discoglossid frog in North America and perhaps the most primitive salientian in the world. *Ascaphus* lives only at high altitudes among the Olympics and certain other western mountains. A number of specimens were sent alive to the museum by shipping them in a device allowing water to drip continually upon them. Not only did they arrive in good condition, but several were kept alive in this manner for nearly five months while very satisfactory studies were conducted upon them.

Among the other specimens mounted or cast during the year was a partially albinistic timber rattlesnake. Albinism is uncommon in snakes, and extremely rare in rattlesnakes. A handsomely colored western frog, *Rana pretiosa*, was cast and colored by Mr. Stoll. Mr. Escherich devised a new way of mounting the skins of lizards. The four splendid examples of this work which have just been placed on exhibition augur well for the future reptilian exhibits.

Every effort was made to complete the work on all partly mounted specimens, even though some of these would form only a temporary exhibit. Thirty-three additional specimens were placed on exhibition; fourteen of these were batrachians, eight lizards, seven snakes, and four turtles. The present synoptic series includes a number of duplicates; some of these will be placed in habitat groups while others will be sent away in exchange.

Great strides were made during the year towards furnishing the exhibits with permanent labels. The entire set of labels for the synoptic series was revised and others were prepared for the new exhibits. The label for the Horned Iguana Group was rewritten and a huge double label for the Florida Group well started.

As the study collections have developed, and it was recognized that the Department was in a position to give technical as well as popular information on many phases Service to of herpetology, the number of institutions and the Public individuals who have applied to us for assistance has greatly increased. Fifty-six specimens were sent to the Department during 1921 for identification and return, while the identification of many specimens donated to the Museum was requested. The method of studying microskeletons as developed by the Department has been adopted elsewhere. Typewritten directions have been sent in answer to requests from a number of investigators. Numerous queries on various features of reptilian and amphibian life are made by correspondents and visitors each year, while the growing exhibits furnish answers to the questions of many others. The several popular and semi-technical lectures given to the Boy Scouts and other interested audiences have done much to bring the Department into closer contact with the public.

Several important researches were completed this year. A report on the collections secured by the "Albatross" in 1911 was presented for publication. The report includes a discussion of the distribution and origin of the Lower Californian herpetological fauna, a check list of the amphibians and reptiles known from the peninsula and neighboring islands, together with many taxonomic notes on the species collected by the Albatross Expedition. In the course of the work on this Lower Californian material, Assistant Curator Schmidt has prepared a number of shorter papers on the taxonomic relations of North American lizards with which he dealt. As indicated below, two of these papers have been published; a third is still in manuscript. The latter is entitled "A Review of the Genus of Lizards *Holbrookia* Girard." Mr. Schmidt has also published two short papers this year completing his work on the West Indian collections of the Museum. It is hoped that the Whitney South Sea Expedition will continue to make herpetological collections which will serve as a basis for a more extensive report than the preliminary notice given in *Copeia* by Mr. Schmidt.

Mr. C. L. Camp's research on the Classification of the Lizards was continued this year with considerable success. Much work was done on the musculature of the hyoid apparatus and the throat, which has proved unexpectedly interesting.

The Senior Assistant Curator has presented for publication the first part of his "Phylogeny of the Salientia," dealing with the osteology and myology of nearly half of the known genera of frogs and toads. A new classification of the Salientia is given and a critical examination of the structural basis of classification is made. A number of shorter papers were published by him during the year. These deal chiefly with the several South American collections which he has well in hand.

The splendid Barnum Brown collection from Abyssinia and Somaliland, as well as the first shipment of reptiles and amphibians from the Third Asiatic Expedition, are already studied in part. They will form the basis of taxonomic, distributional, and morphological investigations.

The following technical papers were published in 1921 by the Department staff: four in *American Museum Novitates*, two by G. K. Noble, and two by K. P. Schmidt; three in the *Bulletin* of the American Museum of Natural History, one by G. K. Noble, and two by K. P. Schmidt; two in the *Annals* of the New York Academy of Sciences, by G. K. Noble; and three in *Copeia*, one by G. K. Noble, one by G. K. Noble and C. H. Pope, and one by K. P. Schmidt.

In addition to the above, the Senior Assistant Curator published three popular articles in *Natural History* and one in *Father and Son Library*.

BIRDS*

FRANK M. CHAPMAN, Curator

The outstanding features for the year 1921 in the Department of Birds are, the addition to our staff of Doctor Robert Cushman Murphy, the inauguration of weekly staff meetings, the completion of the rearrangement of our study collection, the success attending the explorations of the Whitney South Sea Expedition and the purchase of a vessel for its further development, the visits to foreign museums by two members of the staff, and the progress made in the important pieces of work which were inaugurated the preceding year.

Before the beginning of 1921, the field work of the Whitney South Sea Expedition, made possible through the generosity

Whitney South Sea Expedition of Mr. Harry Payne Whitney, had been well started, and, during the present year, Mr. Beck and his assistant, Mr. Quayle, have devoted themselves to uninterrupted collecting, with re-

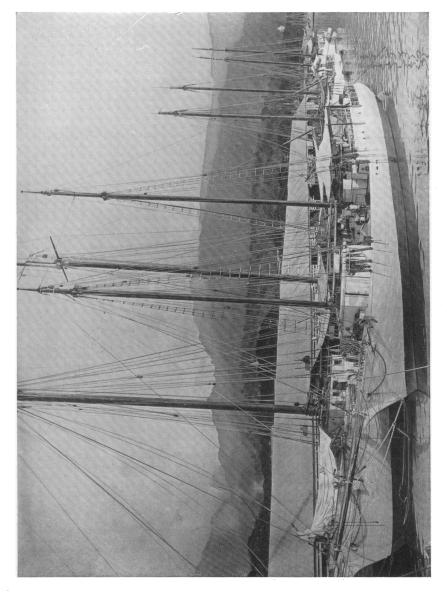
sults that are highly gratifying. Relying altogether upon small trading vessels, or upon launches which they were able to obtain at Tahiti for short periods, they have covered a surprisingly large portion of eastern and central Polynesia, from Christmas Island, north of the equator, southward to Rapa, in about 25° S. Lat., and from the Western Islands of the Society group eastward as far as the Austral Islands and the Tuamotus. No less than eight islands of the last-named group have been touched at, and two trips have been made to the Marquesas. With the thoroughness which is so characteristic of him, Mr. Beck has gone back repeatedly to certain stations until he has discovered the season or the particular locality which would enable him to collect the rarities which his instructions told him he should expect to find.

So far as we know, all shipments of material, photographs,

* Under the Department of Ornithology (see also pages 210 and 211).

New schooner of the American Museum of Natural History, purchased for the Whitney South Sea Expedition

DEPARTMENT OF ORNITHOLOGY THE FRANCE



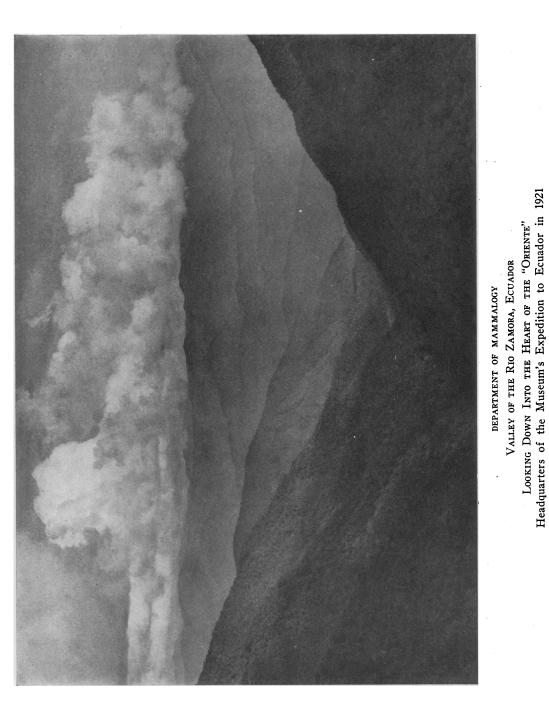
letters, and notes which have been sent from the field have now arrived safely at the Museum. The collections to date comprise approximately 1,800 bird skins, and a considerable representation of nests, eggs, birds preserved in formalin, and birds' stomachs with their food contents. Collateral material which has been collected, without in the least interfering with the primary objects of the expedition, include a large case of Tahitian plants preserved by the usual botanical methods, and a collection of reptiles, which, though small, is stated by Mr. Schmidt to be the most important herpetological material brought to an American museum from Polynesia since the United States Exploring Expedition in the early part of the last century.

Mr. Beck has sent us a large collection of photographs, together with his notes, data, and no less than four articles for *Natural History*. Mr. Quayle's notes comprise twentytwo field books, or a total of more than two thousand pages of closely written manuscript. Although this journal is, in part, personal, it also includes a record of many acute observations, sketches, and suggestive notes which throw interesting side-lights upon the social and biotic conditions in Polynesia. After reading two of his volumes and glancing through many others, it seems likely that this record may prove to be one of the most valuable productions of the expedition.

In November the Committee of the expedition took action upon a matter which is bound to be of the utmost importance. Upon the recommendation of Mr. Beck, a new French schooner of seventy-five tons burden, with a sixty horsepower engine, was purchased at Tahiti. The Committee gave careful consideration to the financial obligations which would result from the acquisition of our own vessel, and decided that it would be quite possible for us to meet them successfully. With his own vessel we may expect that Mr. Beck, who is by this time thoroughly familiar with the local conditions and the opportunities, will find a way to produce results even more remarkable than those which he has attained up to the present time.

In June, 1921, Mr. George K. Cherrie returned to southern

Ecuador to continue the work begun by himself and Mr. Anthony in 1920. He was accompanied by Mr. Ecuadorian Geoffrey T. Gill, and later was joined by Mr. Expedition G. H. H. Tate, who represented the Department of Mammals. Work was progressing satisfactorily when, on the morning of September 21, the accidental discharge of both barrels of Mr. Cherrie's shotgun, held in his left hand while he was retrieving a bird with his right, sent a charge of number eight shot through his forearm, severing the ulna. Such ineffective first-aid treatment as could be given so serious a wound was at once applied, and as soon as animals could be secured he started for the port of Santa Rosa, distant eightyfive miles, where he planned to catch the weekly steamer for Guayaquil. The pain occasioned by his wound was so excessive that he was unable to ride on the level or down hill, and consequently walked all the way except up-grade. The trip included the ascent and descent of a mountain 8,000 feet in height. He was able to get very little to eat that he could retain, and was assured by the sympathetic natives he was mortally wounded. encountered. that. as he why eat anyway! The last day of the three-day journey to Santa Rosa, they took the trail at midnight in the hope of getting the boat that left Santa Rosa at 8 A. M., but arrived three hours after it had left. Since his life depended upon catching the boat, they started after it in a canoe, and by great good fortune caught it at a port further down the river at midnight, just fifteen minutes before it sailed. The last day, therefore, he was under way for twenty-four hours, and until he reached the steamer he had not slept from the time of his accident. Guavaguil was reached at 1 P. M. on September 25. By this time his arm was as large as his leg, and so gangrenous that his life was despaired of. An operation was performed as soon as possible, and the shattered sections of the ulna removed. Mr. Cherrie's condition then began to improve under the care of an American physician, Doctor Parker, and five weeks later, taking advantage of the return to this country of our resident health officer at the port of Guavaguil, he came with him to New York. He reached us in a really remarkable condition, when one considers all of his experiences, with a wound that was healing as rapidly



as one could expect, while an X-ray showed the probable regeneration of bone in the ulna which eventually may unite the severed ends. In short, we have every hope that in due time he will recover the use of his arm.

Mr. Watkins has continued to represent the Museum in Peru. He has sent us the most important collection which

Peruvian Birds we have thus far received from him, containing over seven hundred specimens from Maraynioc, in the Humid Temperate Zone of the Eastern

Andes. Many species of birds have been described from this locality as the result of the researches of von Tschudi, Stolzmann, and Kalinowski, and Mr. Watkins secured topotypes of most of them.

Under "Expeditions" should also be included mention of the Curator's visit to England in May, and Mr. Chapin's visit to

Visits England and the Continent from August to the to Other end of the year.

Museums These journeys have not only greatly enriched the experience of the men who made them, but they have brought us into personal contact with practically all the leading ornithologists of the Old World. Our relations with these gentlemen, therefore, will be far more effective when it comes to matters of exchanges of specimens, or requests for their loan, or for information, than if we were to know them by correspondence only. At the same time, through the presentation of addresses on the work of our Museum, we have acquainted our colleagues on the other side with our methods of research, in which they have evidently found much that was novel and commendable.

In addition to the specimens received from our field expeditions, our collections have been greatly enlarged by both

gifts and exchanges.

Acquisitions From Lord Rothschild we have received by gift a collection of birds from Lord Howe Island, all the species contained in which were new to our Museum.

From the Goeldi Museum, at Pará, through Doctor Emilie Snethlage, we have received cotypes of several exceedingly interesting species sent to us for description. From the National Geographic-Yale University Expedition to Peru we have received a set of the birds collected by Mr. Edmund Heller in the Urubamba Valley while on that expedition. These were sent in return for Dr. Chapman's preparation of a Report on this collection.

From W. F. H. Rosenberg, a dealer, we have secured numbers of species by exchange which were not before represented in our collections, and by exceptionally important exchanges with the British Museum, and the Zoölogical Museum at Tring, England, we have secured no less than 136 species of Neotropical birds which were new to us.

All species received during the year have been entered in our catalogue, given their serial number, and proper place in the collections.

After a year and a half of continuous work, chiefly by Mr. Griscom, our entire study collection has been completely **Rearrange** reorganized, as outlined in the Report of the ment of Department for 1920. The establishment of a **Collections** reference series, containing usually a pair of each species, we find has added greatly to the practical use of the collection through greater accessibility, and also has increased its scientific value, since this arrangement brings together—usually in one tray—all the species of a genus, and permits of their ready comparison.

The Curator has continued work on his Memoir on the Birds of Ecuador, designed to be a companion volume to the

Research one already issued on the Birds of Colombia. As by-products, various correlated lines of investigation have of necessity been pursued, resulting in the preparation of short papers.

Mr. Miller has continued work on his Classification of the Woodpeckers and Their Allies, investigating the ptilosis of the wing, and related matters of birds in the flesh received from the Zoölogical Park, and has rearranged the entire collection of Hummingbirds.

Doctor Murphy joined our staff on February 1. He has devoted himself mainly to the study of the Brewster-Sanford collections of South American marine birds, thereby laying the foundation for an important Monograph on this group. Much of his time has, of necessity, been required in the management of the Whitney South Sea Expedition, and in the care and preliminary examination of the collections received from that expedition.

Mr. Chapin, who is in charge of our Old World collections, rearranged the study collection from that area, and continued work on his Monograph of the birds of the Belgian Congo, until his departure for Europe in August.

Mr. Griscom has devoted his time chiefly to the completion of the rearrangement of the study collection, and to the revision—in connection with the Curator—of the House Wrens of the Western Hemisphere. He also has charge of the limited amount of work which was necessary in connection with the exhibition collections, including the selection of a new set of labels for our mounted birds.

Mrs. Reichenberger has worked upon the identification of Ecuador material, rearranged the species of the Family *Formicariida*, and devoted the balance of the year to a revision of a report on the Roosevelt Collection.

The following papers, based on a study of Museum material, have been published by members of the Department staff in 1921: seven in American Museum Novitates, two by Frank M. Chapman, two by James P. Chapin, one by Jonathan Dwight and Ludlow Griscom, one by George K. Cherrie and Mrs. E. M. B. Reichenberger, one by W. DeW. Miller and Ludlow Griscom; one in the U. S. National Museum Bulletin, by Dr. Chapman, one in our Bulletin, by Dr. Murphy in collaboration with Francis Harper; one in the National Geographic Magazine, by Frank M. Chapman; eight in The Auk, one by W. DeW. Miller and Ludlow Griscom, one by James P. Chapin, six by Ludlow Griscom; one in the Brooklyn Museum Quarterly, by Robert Cushman Murphy; two in Ibis, one by James P. Chapin and one by Ludlow Griscom; one in Memoria de la Compañia Administradora del Guano (Lima. Peru), by Robert Cushman Murphy; and one in Natural History by Robert Cushman Murphy.

Thirteen papers were presented by members of the Department staff at the Annual Congress of the American Ornithologists' Union, in Philadelphia, November 8 to 10, 1921: three by Frank M. Chapman, one by Frank M. Chapman and Ludlow Griscom, three by Waldron DeWitt Miller, three by Robert Cushman Murphy, two by Ludlow Griscom, and one by Mrs. E. M. B. Reichenberger.

An article by Frank M. Chapman, "The Distribution of Swallows of the genus Pygochelidon," and three articles by Ludlow Griscom, are in press.

The cordial coöperation which exists between this department and our colleagues in various parts of the world, makes our respective collections accessible to us all; Loans where occasion arose we have, from time to time, during the year, borrowed specimens from our fellowworkers, and it has been our privilege to comply with requests for the loan of material from museums and private individuals both in this country and in Europe.

In addition to the material which we have sent to our colleagues, we have also filled the wants of numerous artists who come to the Museum to secure models for their work.

Year by year, as the contact of this department with the public becomes closer, the demands upon us for information

Office Routine and assistance have very greatly increased. These are made by correspondents and visitors; and include not only requests for information in regard to almost every phase of bird-study, but for technical advice concerning the enforcement of game laws and the laws governing the importation of foreign species.

Our card catalogue of references to the descriptions of new species, and to the literature of ornithology, has been kept up to date by Mrs. Fraser, and forms an indispensable part of our department equipment.

A small number of species received in the flesh from the New York Zoölogical Society, which were not represented in our exhibition collections, have been mounted for display. Lack of space has made it inadvisable to prepare new collections for our exhibition halls.

The weekly staff meetings, which were inaugurated in

April, have served not only to develop a community of interest in the department, but to improve the character of our work.

These meetings are taken charge of in turn by the members of the staff, who present the results of their work for discussion. On several occasions we have invited visiting naturalists to address us, and we have been honored by the presence of the President and the Director of the Museum.

MAMMALS*

J. A. Allen, Curator[†]

Roy C. ANDREWS, Associate Curator of Mammals of the Eastern Hemisphere

H. E. ANTHONY, Associate Curator of Mammals of the Western Hemisphere

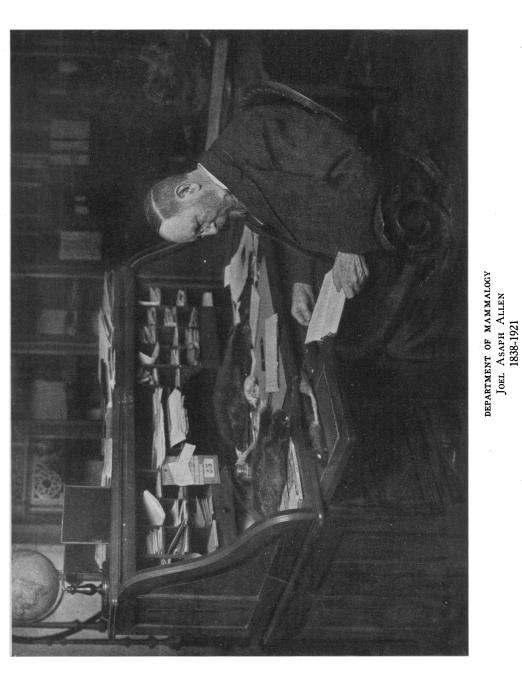
The Department has experienced a year of growth, a year of advance along several of the lines of activity, but the drafting of such a report is overshadowed by the great loss which has come to the department during the year. The imprint of the work done by the late Curator of the department, Dr. Joel Asaph Allen, is so deeply impressed upon every feature of the departmental activity, and his personality had such a direct influence upon the personnel formerly under his direction, that, hereafter, an annual report of the Departuent of Mammals, in all that it reports of progress and achievement, must stand as a testimonial to one who may have left the department in body, but who, nevertheless, remains in these rooms and corridors in spirit.

The number of specimens received during the year totals 2,110, received as follows: by expedition, 1,525; by purchase, **Accessions** 227; by gift, 352, including a number from the New York Zoölogical Society and from the Department of Parks. The most noteworthy of these accessions are: by expedition to Ecuador, 1,490 specimens; from Mr. Barnum Brown in Abyssinia, 53; a purchase of two specimens of South African elephant; the gift of the Bronson collection of African heads, 43; an Inyala buck given by Mr. George A. Chamberlain, and four additional specimens purchased; a fine pair of Koodoo horns given by Mrs. Josephine B. Cook.

Mr. Roy Chapman Andrews, Associate Curator of Mam-

^{*} Under the Department of Mammalogy (see also pages 211 to 213).

[†] Deceased, August, 1921.



For thirty-six years head of the Department of Mammals in the American Museum mals of the Eastern Hemisphere, completed successfully his plans for the Third Asiatic Expedition, and
Third Asiatic sailed for China early in the year. He organized his native personnel, brought together other members of his party and was later joined by
members leaving from the States. Active work was begun, and letters received from Mr. Andrews and others of the expedition indicate very successful and gratifying results. No large shipment of mammals has, as yet, been received from the field, but the reports inform us that collections are being accumulated; already more than 300 mammals, and 5,400 fishes, reptiles and batrachians have been shipped.

Mr. H. E. Anthony, Associate Curator of Mammals of the Western Hemisphere, returned to the department in March

from his expedition to Ecuador. This trip was Ecuadorian of about eight months' duration, and he was Expedition accompanied by Mr. George K. Cherrie who had charge of the bird work. Mr. Anthony brought back the largest collection of mammals this Museum has ever received from South America, and, as far as records show, no other museum has ever received as large a collection from a single expedition to South America. Of the 1,550 specimens brought back, some 943 were collected personally. while the remainder were secured by gift and purchase from Mr. Ludovic Söderstrom of Ouito. This collection will serve as a nucleus for the acquisition of Ecuadorian mammals until enough have been received to warrant the publication of a report in full on the mammals of the republic.

In May an expedition was organized, in the charge of Mr. Cherrie, to return to Ecuador and go on with the work where it was dropped by the previous expedition. Mr. G. H. H. Tate was sent in July to join Mr. Cherrie as a representative of this department. Unfortunately Mr. Cherrie met with a severe accident, the unexpected discharge of his shotgun breaking his right arm and threatening fatal consequences, which necessitated his immediate withdrawal from the field. The expedition was thus placed under Mr. Tate's charge and he and Mr. Gill have been working under direction from New York. They were instructed to return to New York at the close of 1921.

In May, an expedition left for Australia. This work was directed by Dr. W. K. Gregory, and the Department of Mammals sent as its representative, Mr. H. C. Australian Raven, whose long experience in Indomalaysia Expedition makes him a particularly valuable man for this Mr. Raven is still in Australia, and it is planned enterprise. to keep him there for the ensuing year. Dr. Gregory has returned and reports very favorable progress, while a recent letter from Mr. Raven tells of the growing collections. It was highly important that the work in Australia be begun at once and actively prosecuted, since the peculiar conditions prevailing there foretell the extermination of an important part of the fauna in the very near future. This department possesses only the most meagre representation of the Australian fauna, and it is most fortunate that this expedition has gotten under way so auspiciously. Material for habitat groups has been secured, and in addition material of the great gray kangaroo (Macropus), flying phalangers (Petaurus, Acrobates), opossums (Trichosurus) and insectivorous forms (Phascologale).

Mr. Carl E. Akeley left in July for Africa with the purpose of studying gorillas in the field and of securing material for

Akeley African Expedition a group of gorillas in the proposed Roosevelt African Hall. As might be expected by everyone who knows Mr. Akeley, he has been successful in his quest, and a recent cable has been received

announcing the capture of five gorillas, one of them a huge male weighing some 360 pounds. Mr. Akeley is expected to return in the spring of 1922.

Most of the time and energies of the two department assistants, Mr. Goodwin and Mr. Carter, have been directed toward the proper arrangement and storage of the study collections. Fortunately, the department has received some fifty-four units of the new steel storage cases, which hav: been disposed as follows. The room occupied by Associate Curator Anthony has been completely equipped with the new units; the entire length of the corridor down the north wing has been equipped with cases along the west wall; the west, north and east walls of the osteological storage room have been lined with the new units, while three additional rows of them have been extended along the walls immediately at the entrance of the North Wing. This latter arrangement is a temporary one, and the cases will be removed to departmental space as soon as any may be made available. This congestion was caused, in part, by the withdrawal of this department from the concrete storage room on the east side of the corridor, this room having been designated as the property of the Department of Birds.

Other installations include the refinishing of one of the osteological storage rooms in the attic. This included the formation of a double ceiling which Mr. Beers, Chief of Construction, planned to cut down the excessive heat to which these rooms are subjected in summer. Upon completion, the room was equipped with the three section units of uniform type, used throughout this department. The final result is so eminently a success that the refinishing of all the upstairs rooms, at as early a date as possible, should be given the consideration it merits.

The shifting over of collections into the new units, the assembling of material hitherto stored in several rooms, the cataloguing of specimens from the field and the working out of several new plans for the better utilization of study material, such as a card index of every specimen in the collection, have kept the department assistants busy and have required as well frequent supervision by others of the staff. Despite great progress made in all these matters, not the least of which was the complete removal of all specimens from the concrete vaults at the end of the corridor where they were continually subject to insect attack, the collections have now reached such a size, approximately 40,000 specimens, that there still remains a great deal to be done.

The entire collection of mammals from the Congo Expedition, brought back by Messrs. Lang and Chapin, is now completely catalogued and available for study, but still requires about twenty-five more storage units for its proper disposition.

Due to the crowded condition of the mammal halls, there has been little incentive toward group construction. Mammals mounted and placed upon exhibition include the Cougar Group (practically completed) and the Fur-Seal Group (nearing completion), the young Gorilla, "John Daniel," and the Nordic Horse, also a reproduction of a Pyrmy Sperm Whale. Until such time as the mammal halls may be relieved of the present congestion, by the possible expansion into additional space, it is well-nigh impossible to bring out new exhibition material.

The late Dr. J. A. Allen, Honorary Curator of this department, was working upon the collections of the Congo Expedition

when his last illness took him. He had brought to completion the reports upon the Carnivora, nearly all the Primates, all of the Chiroptera and Insectivora, and a large part of the Rodentia.

Mr. Herbert Lang, the Assistant Curator of African Mammals, has been collaborating in this work, giving the benefit of his field experience in the notes on habits, life histories, etc. Much of the work is practically available for the press; some of it needs but little additional labor to make it so. No small part of the time of Mr. Lang has been occupied with the supervision of the drawings for the illustration of the Congo reports, while other details of these reports have demanded constant attention from him.

Associate Curator Roy Chapman Andrews has described a new Serow from Yun-nan Province, China, and has also published on the hind limbs of the Humpback Whale. In addition he has published accounts for the general public, dealing with his work in Asia, the most important of which is his book "Across Mongolian Plains."

Associate Curator H. E. Anthony has done research work upon the mammals of Ecuador and the mammals of British Guiana. He has begun a systematic report upon the mammals of Ecuador with the view of publishing a handbook that will serve as a working basis both for the scientific worker and for the educated traveler in South America who wishes to know something of the mammal life there. The completion of this report will probably require several years as it will be necessary to do additional field work, but already there is sufficient material on hand to warrant the publication of the most extended regional report yet made upon the mammals of South America, by this or any other museum. The bibliography for this handbook is practically complete, and a preliminary report on new species has been published in *Novitates*. Another report is nearly ready for press. Most of the summer was spent in preparing a report on the mammals collected by Mr. Beebe in British Guiana. Mr. Anthony has published two papers as the result of this work, the first a preliminary report on new species in *Novitates*, the main report appearing in *Zoölogica*.

Under the direction of President Henry Fairfield Osborn, Mr. Anthony has devoted considerable time toward the compilation of data bearing upon "the close of the age of mammals." President Osborn intends this material to be used in a joint article—Osborn and Anthony—to appear in Natural History.

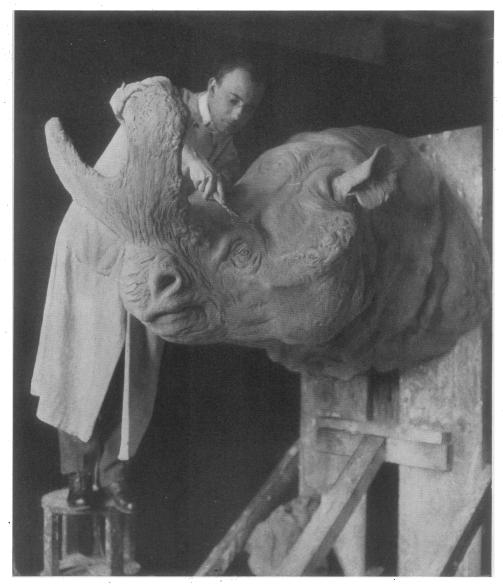
For the general public, Mr. Anthony has prepared three separate accounts dealing with the Museum's work in Ecuador, one appearing in the National Geographic Magazine, the other two in Natural History.

The publications of the Department staff for 1921 were as follows: four in American Museum Novitates, two by Roy Chapman Andrews, and two by H. E. Anthony; three in Natural History, one by Roy Chapman Andrews, and two by H. E. Anthony; one in Science by Mr. Anthony; one in Asia by Roy Chapman Andrews; one in Harper's Magazine by Roy Chapman Andrews; one in Zoölogica by H. E. Anthony; one in National Geographic Magazine by H. E. Anthony; one in National Geographic Magazine by H. E. Anthony; one in Nature by H. E. Anthony; "Across Mongolian Plains" (D. Appleton & Company), by Roy Chapman Andrews. A paper by Mr. Anthony, "Review of Thorburn's 'British Mammals,'" is in proof for the next number of the Journal of Mammalogy.

Owing to the constant shifting in arrangement of the study collections, a condition brought about by the installation of new

summary and improved storage facilities, by the necessity for removing valuable material from receptacles not insect proof, and by the ever increasing pressure of growing collections and decreasing departmental space, the year just passed has been most important in that it marks the height of this activity. Now the end appears to be in sight, and most of the work which is done may be felt to be constructive and permanent, not merely makeshift and temporary. New ideas in storage and cataloguing are being put into practice in order to secure the maximum safety, accessibility, and utilization of the material in the department. These ideas have been tested and are in practice in some other institutions, and the present state of transition in this department affords an excellent opportunity to make such changes.

It is to be sincerely hoped that the plans for the reorganization of the mammal collections may be carried out to the fullest details; otherwise the entire scheme must necessarily suffer.



DEPARTMENT OF VERTEBRATE PALÆONTOLOGY ERWIN S. CHRISTMAN AT WORK UPON THE MODEL OF BRONTOTHERIUM Draftsman, artist and sculptor in the Department of Vertebrate Palæontology, who died November 27, 1921

EXTINCT VERTEBRATES* HENRY FAIRFIELD OSBORN, HONORARY CURATOR W. D. MATTHEW, CURATOR

Doctor William King Gregory has been transferred to be curator of the newly-created department of Comparative Anatomy, with Mr. S. H. Chubb as assistant.

Changes in Staff In the death of Mr. Erwin Christman the Museum has lost one of the ablest and most promising of its illustration staff. Mr. Christman was in the prime of life and had been connected with this department since boyhood. Gifted, hard working, painstaking, loyal and unselfish⁻ in official and personal relations, he was cordially liked and much respected by all his associates.

The Snake Creek fossil quarries in western Nebraska were worked during the summer by a party in charge of Albert

Field Work Thomson. A large collection was secured, mostly fragmentary, but containing a series of fifteen skulls of Carnivora, three-toed horses, camels, ruminants, etc., a crocodile skull and several shells of turtles, besides great numbers of jaws, teeth and bones of some forty to fifty different kinds of animals, several of them new to science.

Associate Curator Granger left for China in May to join the Third Asiatic Expedition as palæontologist. His reports indicate that up to the end of the year he has been chiefly busied in organization and reconnaissance work. These preliminary problems are especially difficult in China, where there has been very little geologic survey work, the usual prerequisite for systematic fossil collecting. During the coming season this requirement will be partly filled by the attachment of Professor Berkey as geologist to the staff of the expedition.

Associate Curator Barnum Brown rejoined the staff of the Museum in August and has been engaged upon reconnaissance work in Greece, Asia Minor and India, as a preliminary to

^{*} Under the Department of Vertebrate Palæontology (see also page 213).

systematic search there for fossil mammals. During the earlier part of the year, although not officially upon our staff, he yet found time to collect and present to the Museum valuable series of modern reptiles, fishes and invertebrates and a few fossils.

The skeleton of the "Running Gorgosaurus," a gigantic carnivorous dinosaur mounted as a panel in a running pose, has been

Preparation and Exhibition placed on exhibition temporarily in the Hall of the Age of Mammals, and opposite is a skeleton of the Ostrich Dinosaur, mounted in a standing pose to show the extremely slender proportions and rela-

tive height of this comparatively small member of the Dinosaurs. A partial skeleton, chiefly fore and hind limbs, of another Ostrich Dinosaur, is placed beside it. Considerable progress has been made with the preparation for mounting of the two Horned Dinosaur skeletons, the giant *Triceratops* from Montana and the smaller *Monoclonius* from Alberta; and with a specimen of the Armored Dinosaur *Palæoscincus*, in which the head and a large part of the body armor were found in position. This specimen is of particular value as showing for the first time just how the massive bony plates and spines were arranged in this group of armored dinosaurs.

The skeleton of the primitive Long-Jawed Mastodon, Trilophodon productus, has been completed and placed on exhibition beside its larger relative the *T. giganteus*, mounted two years ago. The reconstructed skeleton of the gigantic Eocene flightless bird Diatryma has been placed in the corridor near the elevator, and the original bones, too much distorted by crushing to articulate properly as a mounted skeleton, are arranged as a panel mount in the wall case close by. This unique skeleton is regarded as one of the great scientific treasures of our fossil collections. The large block of fossil bones in the rock from the Agate Fossil Quarry in Nebraska, in the centre of the Hall of the Age of Mammals, is a very instructive illustration of how these specimens are found and of the probable explanation of their occurrence.

A skeleton of the Pliocene One-Toed Horse, *Pliohippus*, has been placed on exhibition, and the mounting of a second skeleton of a young individual is well advanced. When completed these two will be associated in a group exhibit to represent this important stage in the Evolution of the Horse, intermediate in



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Painted under the direction of Honorary Curator Henry Fairfield Osborn for the Hall of the Age of Man, by Charles R. Knight (Sabre-tooth Tiger, Ground Sloth, Columbian Mammoth, Extinct Vulture)

DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

RANCHO LA BREA GROUP

Presented with the Morris K. Jesup Fund

time and in its evolutionary characters between the Three-Toed Horses of the Miocene and the large One-Toed Horses of the Pleistocene and present time.

The exhibit of the extinct animals of South and Central America has been re-cased, the large Groundsloth and Glyptodont

Rearrangement of South American Fossil Mammals Group being now installed in a suitable case at the center of the south side of the hall, and the Toxodon, Macrauchenia and Hippidium skeletons in a wall case next to them. The large group is illuminated by electric lights concealed within the margin of the top of the case and now affords an

excellent example of the advantages of this type of illumination, for which it was originally designed when planned ten years ago. It is probable that methods of artificial lighting can be applied to many of the fossil exhibits in the future arrangements of the Museum and will be of great aid in (1) featuring those of especial importance, (2) providing the strong illumination necessary to observe very small objects, and (3) solving the problem of combining the large proportion of wall space required for fossil exhibits with adequate lighting throughout.

The Second International Congress of Eugenics in September held its general meetings in the Age of Man Hall, necessitating the removal of a part of the exhibits and the installation of a number of temporary exhibits appropriate to the interests of the Congress. Some of these exhibits still remain, pending a rearrangement of the Proboscidea collections in conformity with the revision of this order by Professor Osborn noted below.

Professor Osborn has been engaged during the year upon a phylogenetic and systematic revision of the Proboscidea. The

Researches and Publications Museum has acquired in the course of the last twenty years a splendid collection of fossil proboscideans, rivaled only by the great series in the British Museum. Much of this collection is new and undescribed and is of great value in tracing the evolution and phylogeny of the mastodons and elephants. With the aid of this new evidence Professor Osborn has been able to separate twelve distinct phyla of proboscideans of which the most extended is that of the American Mastodon, traced back to the Lower Oligocene of Egypt. The studies upon the Sauropodous Dinosaurs were continued by Professor Osborn and assistants, and a memoir upon the skeleton and adaptations of the genus *Camarasaurus* Cope by Professor Osborn and Doctor Mook was completed and published.

Professor H. Matsumoto of the Imperial College of Science, Tokio, Japan, continued his researches upon the Fayûm fauna of Egypt and completed revisions of the *Palæomastodon* and Hyracoid groups, which will be published by the American Museum.

Mr. Frick was engaged during the year in a very thorough monographic research upon the valuable collections which he has obtained from the Eden formation in California. The preparation of this collection was continued through the year by two assistants and the illustration of the material by an artist, the expenses of this work being defrayed by a special fund of his providing. The fauna is of unusual interest as representing a Pliocene stage in the evolution of American Tertiary mammals that has hitherto been very imperfectly known, and the research has resulted in the discovery of many new forms and the recognition of new or little known stages in the evolution of various phyla.

Doctor Matthew continued research work upon the Paleocene mammals, and published four preliminary notices, two in the *American Museum Novitates*, one in *Science*, one in *The American Journal of Science*, describing a number of new genera, and dealing with the stratigraphic relations and correlation of the Paleocene faunas. He also prepared a preliminary notice upon the taxonomy of the group of Carnivorous Dinosaurs, with description of a new genus, as a joint contribution with Mr. Barnum Brown; revised the Snake Creek fossil mammal collection of 1918 and a part of the collection of 1921, and contributed a number of articles to *Natural History*.

Doctor Gregory continued his researches upon comparative anatomy of the vertebrates and especially upon the evolution of the human dentition, up to the time of his transfer to a separate Department of Comparative Anatomy. His report of work for 1921 will be found elsewhere.

Miss Marjorie O'Connell continued through the year her researches upon the Jurassic fauna of Cuba, based chiefly upon the collections secured by Mr. Barnum Brown and presented to the Museum in 1920. The results of this work will be contained in a monograph, written jointly with Mr. Brown, on the stratigraphy and palæontology of the Jurassic of Cuba, to be published later, but preliminary articles by Miss O'Connell appear in the *American Museum Novitates* for 1921, the *Bulletin* of the American Museum for 1922 or 1923, and a joint article in the *Bulletin* of the Geological Society of America for 1922.

Mrs. E. M. Fulda prepared during the year a series of 211 new photographs, chiefly in connection with the various researches above specified, including also a series of photography and Illustration the preparation staff. Some of the latter have been published in Natural History. The cataloguing of all negatives in the department, filing and record of prints, and mounting of a complete series of prints in the departmental albums, has been brought up to date under direction of Miss Jannette M. Lucas.

COMPARATIVE ANATOMY*

WILLIAM K. GREGORY, Curator

As it is clearly recognized that effective exhibition work rests Research upon comprehensive research, the Curator has supervised or coöperated with the following investigations:

Dr. G. K. Noble's researches on the classification of the Salientia, or anurous Amphibia, have resulted in the preparation of an extensive article for the *Bulletin*, which is now in press. This is an extremely important and fundamental work and will have a very direct effect upon certain museum installations and exhibits.

In collaboration with the Curator, Dr. Noble also has in progress a paper on the evolution of the alisphenoid bone of vertebrates. Much material for illustrations is at hand, but so far the services of an artist have not been available. Dr. Noble is now continuing the research in reptiles and mammals upon the embryological side.

Mr. Charles L. Camp has brought his studies on the myology and classification of the lizards to the point where he is able to make a summary of the whole work, with excellent figures illustrating the evolution of the various parts of the anatomy of these reptiles. He has completed over 50 plates, showing the muscles of lizards of many genera and families. His summary is offered for publication in the *Bulletin*, and will afford the basis for a beautiful exhibit illustrating the evolution and adaptive radiation of the lizards. His investigations are nearing completion, but there is still much to be done in the lettering of the plates for the memoir.

Mr. A. S. Romer has completed his investigations on the locomotor apparatus of the Permian reptiles *Diadectes, Diademodon* and *Moschops*. Over 200 drawings have been made in pencil by him, and after having been inked in by Mrs. Beutenmüller and Mrs. Ziska are now ready for publication, together with his paper on this subject. Mr. Romer's work will contribute

^{*} Under the Department of Comparative Anatomy (see also page 214).

much to the interesting exhibit illustrating the evolution of the locomotor apparatus from fish to man, which is now in progress.

Mr. R. W. Miner has continued his work on the skeleton and musculature of the primitive amphibian *Eryops*. He is carrying on this work outside of museum time, and although it has been greatly interrupted by other duties, solid progress has been made during the past year, and it is now nearing completion.

Dr. D. J. Morton, an orthopædist, has made a thorough comparative study of the mechanics of the feet of man and the anthropoid apes and monkeys. This research is revealing much concerning the origin and evolution of the human foot.

Dr. Milo Hellman has completed a reconstruction of the palatal arch of the Talgai man, a subject which has an important bearing on the relationships of this ancient proto-Australian type. He has also assisted in many ways in conferences on the dentition of men and of anthropoids.

Professor J. H. McGregor visited many museums in Europe and brought home a vast amount of detailed information and stereoscopic photographs bearing on the anatomy of prehistoric races, as well as a large collection of casts of skulls and of cultural objects. He has made gratifying progress towards the completion of his reconstruction of the skeleton of the Neanderthal man and of the braincast of *Pithecanthropus*.

The Curator completed his work on the "Origin and Evolution of the Human Dentition," and with the assistance of Mrs. M. H. Fink the book was finally made ready for the press. The paper on the classification of the various races of mankind, undertaken at the request of President Osborn, has recently been completed.

The Department has also been in touch with several investigators, such as Dr. J. Leon Williams, and has been able to supply them with material or to assist in their researches.

Thanks to the generosity of Mr. Childs Frick, the Museum was enabled to take advantage of the researches of Mr. A. S. Romer on the evolution of the skeleton of early vertebrates, and to secure his services to make a series of models illustrating the successive stages of evolution from the primitive Devonian fish, *Eusthenopteron*, to man. Mr. Romer has completed the model of *Conodectes*, one of the most primitive known four-footed animals, from the Permian of Texas.

The principal items of Mr. Chubb's work during the year may be summarized as follows: "Lee Axworthy" skeleton and Zebra skeleton in process of construction; Mountain Zebra skull and limb bones prepared for study collection; 112 sections of fossil teeth made; "Man-o'-War" album, containing 31 sepia prints, presented to Mr. S. D. Riddle, owner of "Man-o'-War"; 247 prints labeled, trimmed and filed; 149 prints mounted and labeled in Equidæ albums; tables of measurements of Equidæ skeletons; tables of vertebral formulæ of Equidæ.

Work on the series of restorations of dinosaurs, including Camarasaurus, Diplodocus, Ankylosaurus and others, has been interrupted by the sad death of Mr. Erwin S. Christman, and only the Camarasaurus was completed and placed on exhibition. The Curator, accompanied by Mr. H. C. Raven, left New York on May 25th on the "First Australian Expedition." The objects of the expedition are: first, to secure ex-Australian hibition material for the proposed Australian Field Hall; secondly to obtain reference and study col-Work lections illustrating the mammals, birds, fossil vertebrates and anthropology of Australia; thirdly, to bring about a closer cooperation in scientific and educational work between this Museum and Australian museums and other scientific centers. In all these objects the expedition is meeting with considerable success, owing in part to the generous coöperation and assistance of many Australian colleagues and friends.

In the mountains of Northern New South Wales the expedition secured excellent exhibition and study collections, including kangaroos, wallabies, flying phalangers, pygmy phalangers, "opossums" (*Trichosurus*), and several species of small insectivorous marsupials (*Phascogale*). Mr. Raven is now (January, 1922) in Queensland, where he has succeeded in securing the tree-kangaroo, the koala, the rare pygmy kangaroo *Hypsiprymnodon*, and four genera of polyprotodonts.

Dr. Gregory visited the principal museums and other scientific centers in New South Wales, Queensland, Tasmania, Victoria and South Australia, and made arrangements for extensive exchanges illustrating the anthropology, zoölogy and palæontology of Australia. It is planned to continue the First Australian Expedition in 1922.

Since returning from Australia the Curator has pushed the matter of exchanges, and has sent three shipments to the museums at Sydney, Melbourne and Adelaide, while others will shortly be ready. Much exchange material from Australia is awaiting shipment from there, including the skull of the ancient lion-like *Thylacoleo*, and a collection of the original remains and casts of Pleistocene marsupials.

EXISTING AND EXTINCT RACES OF MEN*

CLARK WISSLER, Curator

The personnel of the Department was greatly weakened during the year by the absence of several members of our staff.

Changes in Staff Associate Curator Herbert J. Spinden spent the entire year at Harvard University and is not to return. Associate Curator Robert H. Lowie resigned to accept a position in the University of California. Finally, the serious illness of Assistant Curator Louis R. Sul-

Ivan, necessitating a long, indefinite absence from the City, constitutes another irreparable loss. No provision having been made to fill these vacancies, this threatened reduction in our scientific staff is most lamentable. It is, in fact, the culmination of a drift that began some years ago when we had a staff of eleven, whereas we now have but five on the active list. When we consider the abilities of the men who have gone, it is clear that the efficiency of the Department has declined fully fifty per cent., and that, in consequence, the future status of anthropology in this Museum is jeopardized.

Further, the exhibition work of the Department is hampered by these reductions, the mere routine in the case of incoming collections and other necessary business that falls to this Department, leaving little time for advances in exhibition.

Mr. Will S. Taylor has practically completed the south wall mural for the Jesup North Pacific Hall and has ready for submission the study for the final north wall canvas. Mr. Howard McCormick has completed the background for the great Navajo Group in the Southwest Hall, and Mr. Mahonri M. Young, the sculptor, is at work upon the figures for the same. In the hall devoted to the Indian life of the Eastern Woodlands, a birchbark tipi of the Micmac type has been erected and figures have been made by Mr. Horter to install as a family group with interior settings. The closing of the west wing of the fourth floor has taken from exhibition the South Sea and Philippine collections,

^{*} Under the Department of Anthropology (see also pages 214 to 218).

but it is hoped that these halls may be reopened during the coming year.

This year saw many important acquisitions to our collections representing the Stone Ages of Europe. From France, we were

Accessions honored by the distinguished Abbe Henri Breuil of Paris, who presented a series of palæolithic implements; from M. V. Forbin, of Clamart, we received about two hundred palæolithic implements; and from Mr. Jacques Estanove, of Mas Grenier, Tarn et Garonne, a series of neolithic implements; from Spain, from Dr. H. Obermaier, of Madrid, we received a large collection typical of caves in Northern Spain; and from Wales, a number of palæolithic implements presented by S. Hazzledine Warren, Esq., of Sherwood, Loughton, Essex, England.

Among other gifts, mention may be made of a special batik collection from Java, by Professor Henry E. Crampton; ethnological specimens from the Navajo, Ute, and Sioux Indians, by Mrs. E. H. Danforth; a large collection from Pica, Chile, by Hon. R. Amengual N., Intendente de Tarapaca, Chile; from the late Lawrence Preston Goldstone, a large general ethnological collection; fine feather costumes from Paraguay, by Mr. and Mrs. Wm. M. Baldwin; and a royal embroidered sash by H. R. R. Chow Chom Erp, of Siam. There were other gifts which are enumerated in the list on another page. In all, nearly sixty gifts were made during the year: North America, 21; South America, 7; Europe, 10; Africa, 7; Asia, 4; Polynesia, 6; Malaysia, 2; and Australia, 1. It is this encouraging support from our citizens and friends that is building up rich study and teaching series of materials. Among the purchases should be noted a remarkable collection of gold ornaments from Peru and a large number of similar objects of gold from Bolivia and Panama, making in all a notable addition to our series.

As stated in the report of last year, the Department entered into a joint arrangement with the Bernice P. Bishop Museum

Polynesian Research of Honolulu by which Assistant Curator Louis R. Sullivan took up the direction of the physical anthropological researches of the Bayard Dominick

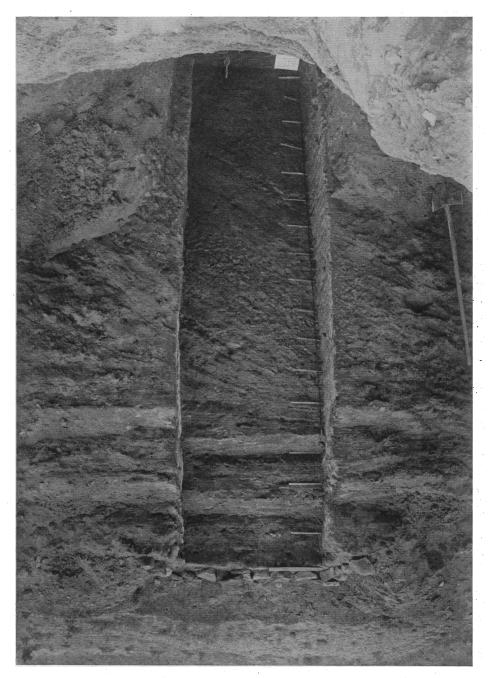
Polynesian Research program of that institution. The greater part of the year was spent in Hawaii. For one thing, a large

collection of study and exhibition material was secured for this Museum; a life cast of a typical Hawaiian man ready for mounting, some fifty plaster face casts of men and women representing the constituent elements of Hawaiian population, including hybrid types; about 1,200 photographs of selected types, etc. The Bishop Museum presented to us a series of skeleton material from Hawaii, with many additional negatives and photographic prints. As a part of the field-work, Mr. Sullivan visited the islands of Lanai, Hawaii, Molokai, Maui, Kanai, and Oahu, examining in all about 1,000 pure-blood Hawaiians and 2,000 In addition, opportunity was taken to mixed individuals. examine and measure the 8,000 children in the schools of Honolulu-Japanese, Chinese, Portuguese, American, Hawaiian, Hawaiian-Chinese, Hawaiian-North and South European. Hawaiian-White-Chinese, Koreans, Porto Ricans, and Filipinos. These data will not only reveal differences in growth but the character of the somatic mixtures. Finally, the various other field parties of the Bayard Dominick Research returned similar data from Samoa, Tonga, and the Marquesas. It so happened that while Mr. Sullivan was examining the children of Honolulu, Dr. Katherine Murdock, a psychologist, was engaged in a mental survey in the schools; Mr. Sullivan cooperated in a joint study of the correlations between mental and physical data among white children. In all, four papers are ready for publication, one on the subject just mentioned, the physical anthropology of the Hawaiians, Samoan somatology, and Tongan فكلات اعتماده بال somatology.

Three major undertakings occupied the time of Mr. Earl H. Morris, who directs the field-work: the further survey of the

The Archer M. Huntington Survey upper La Plata valley; the discovery of and examination of a new site on the Navajo Reservation; and the continuation of work on the Aztec Ruin. Early in the year Mr. Morris published a brief

paper, summing up the chronological relations of the various cultures so far discovered in the La Plata basin, and thus revealed the need of additional confirmative data on the pre-Pueblo period. Accordingly, in the month of August, a special trip was made to the upper valley, resulting in the location of twentyeight burials of that period and their excavation. The material



DEPARTMENT OF ANTHROPOLOGY SECTION OF PREHISTORIC CULTURE LEVELS AT PUEBLO BONITO, CHACO CAÑON, NEW MEXICO Survey of the prehistory of the Southwest supported by the Archer M. Huntington Fund

secured reveals a sub-horizon in the pre-Pueblo period. The months of September and October were given to the examination of a new site on the Navajo Reservation which promises to be of unusual importance. At the Aztec Ruin some new finds were made. Adjoining the painted room reported upon last year, another room was discovered, with ceiling standing in good condition. The floor of this room was covered with earth in which was a burial of unusual interest, accompanied by a shield and many significant objects. Early in the year a large circular depression in the court of the ruin was cleared out, revealing a ceremonial structure of new type. In this case, we find a large circular chamber, or kiva, surrounded by thirteen rooms. There are also a number of unique features in the kiva itself, one being a kind of stage, or elevated floor, upon which parts of the ceremonies may have been conducted.

In July, Mr. Charles L. Bernheimer equipped, financed, and led an expedition into the little known Navajo Mountain coun-

The Bernheimer

Expedition

try of Arizona and Utah. Mr. Earl H. Morris was in charge of the archæological work. The country traversed proved to be exceedingly rugged and difficult, but the party succeeded in working

its way through a number of deep narrow canyons in which were found some small scattered ruins. Though the nature of the trip precluded all attempts at excavation, it was possible to collect samples of pottery sufficient to approximately date all these sites.

Advantage was taken of an offer of coöperation from the Historical Society of North Dakota to study the ceremonies of

Arikara Expedition Mandan and Hidatsa along the Missouri River. Accordingly, Curator Goddard joined Mr. Melvin R. Gilmore of the North Dakota Historical Society in August to observe and record the annual ceremonies. As no important data upon the ceremonies of these Indians have been added since the report of their first observer in 1833, the results of Dr. Goddard's visit will con-

stitute an important contribution to the subject.

After many unexpected delays, a special volume of the

Anthropological Papers was issued reviewing in detail the work of the Hyde Expedition to Chaco Canyon for the Publication exploration of the ancient ruin known as Bonito. and Research This undertaking was liberally supported by Messrs. B. Talbot B. Hyde and Frederick E. Hyde, Jr., and the completion of this volume was greatly facilitated by the personal attention of the former to the details of publication. In the laboratories of the Department, the compilation of fieldmeasurements and other somatological data is progressing at the hands of Mrs. Beardsley Ruml. In collaboration with James R. Murie, chief of the Skidi Pawnee, the Curator completed an intensive study of Pawnee ritualism. At the same time, Miss Helen H. Roberts began the transcription and comparative study of the musical parts of these rituals, an investigation which promises to reveal several new leads in the investigation of primitive music. Finally, our anatomical and other special collections have been used with increasing frequency by special investigators residing in the city, thus indicating that we are becoming an important center of anthropological research.

PUBLIC HEALTH*

CHARLES-EDWARD AMORY WINSLOW, Curator

The work of the Department of Public Health has continued steadily during the year along the line of the development of

Progress in Exhibit Work the section of our permanent Public Health Exhibit dealing with Food Needs and Food Economies. A complete and detailed plan for this exhibit of dietary hygiene, occupying fifteen cases, has been out-

lined, and the individual specimens, models and diagrams are being prepared and installed as rapidly as our resources permit. Additions made during the past twelve months have dealt particularly with the rôle of protein and vitamines in the diet and with certain of the broad problems of world production and consumption of food which form the bases of national economics.

A series of papers on Dietary Hygiene as Taught by Museum Methods, prepared by Miss Mary Greig for *Modern Medicine*,

> represent an important contribution to the analysis of dietary needs from an economic standpoint, particularly as regards the calcium, iron and phosphorus requirements of the human body. A study has been begun of the fluctuations in retail food

prices in five representative districts of New York City, which we hope to extend and continue during the coming year, and the data in our exhibition hall are kept constantly up to date by the use of the information thus obtained.

The work of the Department in maintaining and distributing standard cultures of bacterial types has continued as heretofore.

Museum of Living Bacteria

Original

of Dietary

Hygiene

Studies

The total number of strains under cultivation is now 513, a number of strains of lesser importance having been discarded during the year. In the

period between December 1, 1920, and December 1, 1921, 4,867 cultures were sent out to health department and university laboratories, making the total number of subcultures distributed since the opening of the laboratory in 1911, 34,911.

^{*} Under the Department of Public Health (see also page 218).

The Department contributed a portion of the permanent exhibit in the Forestry Hall to the Health Exhibition held at the

Extra-Mural Extension Service Grand Central Palace, November 14 to 19, under the auspices of the American Public Health Association and the New York City Department of Health. The Department of Public Health has

coöperated with the Department of Public Health has coöperated with the Department of Public Education in the preparation of the exhaustive series of lantern slides on dietary hygiene and other aspects of public health which is being prepared for the City Department of Education. Demands for loan exhibits on dietary hygiene, and particularly for printed matter, have come from hundreds of enquirers in all parts of the country. Loan exhibits we cannot of course attempt to supply, although pictures of the school exhibit have been sent to points as far distant as Baltimore, Toronto and Minnesota. The demand for guide leaflets embodying the main essentials of our exhibit on dietary hygiene is, however, one that we should be prepared to meet, and it would be most desirable to publish one or more such pamphlets in the near future.

Curator Winslow was granted leave of absence from February 1 to October 1, to serve as General Medical Director of the

Foreign Service of Curator Winslow League of Red Cross Societies at Geneva, Switzerland. The past year was a crucial one in the history of this organization, which was established on the initiative of the American Red Cross to stimulate and coördinate the work of national Red

Cross societies as peace-time health agencies; and the Museum, through Professor Winslow's services, was able to render important aid in its reorganization on a practical and effective basis, aid which will influence the progress of public health education in many countries.

During Curator Winslow's stay in Europe, he visited the Museums of Natural History in London, Paris, Berlin, Vienna,

Report on European Museums Dresden and Geneva and reported on the progress in Museum technique which has been made in these cities during and since the war. Particular attention was paid to the development of exhibits

bearing on Public Health, and it is interesting to note that, in London particularly, the tendency in European Museum circles is to expand along the line of exhibits dealing with insects and disease, and with the hygiene of the diet, exactly as we have been doing in New York.

In the last Annual Report, reference was made to the plan, which we have for some years entertained, of a comprehensive

Man

exhibit dealing with the Natural History of Man, the life history and environment of the human Plans for Exhibit of animal, the dangers which beset him and the the Natural methods by which his health and efficiency may be History of maintained and exalted. As a result of his studies

of the Museums of Europe, and particularly the remarkable Hygiene Museum at Dresden, Curator Winslow has prepared an outline of a comprehensive exhibit of this kind, to be worked out in coöperation with the Departments of Physiology, Lower Invertebrates and Entomology of the American Museum, presented in a special report made last autumn to the Board of Trustees by a committee consisting of Dr. Walter B. James and Mr. Felix M. Warburg. The exhibit as projected includes fifteen sections, of which three, dealing with Dietary Hygiene, Water Supply and Waste Disposal, and Insects and Diseases, are now well on toward completion. It is to be hoped that, in connection with the plans for the School Service Building, resources may be found for carrying this plan forward. It will be necessary, however, if such an ideal is to be realized, to increase materially the personnel of the Department of Public Health. At present the entire work of organizing exhibit material is being carried on by a single part-time assistant, and two full-time assistants must be provided if substantial progress is to be realized.

THE LIBRARY*

RALPH W. TOWER, Curator

An annual report necessitates a review of the activities of a twelvemonth; each year's growth depends directly upon the achievements of the period preceding it. Assenting to such premises, one is called upon to pardon the publication of a rather general résumé of the activities of the library in the place of the more limited and specific annual report.

History does not record, but circumstantial evidence indicates, that when Professor Bickmore presented in 1869 a copy of his own work: Reisen im Ostindischen Archipel in den Jahren 1865 und 1866, translated from the English by J. E. A. Martin, director of the university library at Jena, 1869, the American Museum had received its first accession. This gift marks the beginning of a library whose existence was specifically created by the charter that incorporated the institution, and demonstrates with what remarkable foresight and understanding the founders planned the future of The American Museum of Natural History. Although the casual visitor to-day may perhaps be surprised to learn that a library is maintained within the institution, anyone who reflects upon the matter will appreciate immediately the imperative need for its existence, and its vital connection with all the various phases of research and exhibition for which the museum stands: In it may be found the writings of those nature lovers of the past, who, like Walton, White, Fabre and Burroughs, have furnished such delightful and literary descriptions of nature's workings, books which are still an inspiration to the field naturalist of to-day. Here are assembled a well-nigh complete collection of the more exact scientific treatises of natural history, preserving as they do for the present-day investigator and exhibitor the cumulative results of previous discovery and research. In its files also are maintained the ever increasing records of the activities of the innumerable scientific organizations the world over, publications amazing in their extent and prodigious in their importance.

^{*} Under the Department of Library and Publications.

From its first gift of a single book, the library has steadily increased until it now contains more than 100,000 volumes. Its growth is due to two distinct causes: the liberal patronage of the institution itself in the matter of purchase, and again the generosity displayed in the many gifts which have come to it. In many cases these gifts have been whole nuclear units in themselves, and represent years of scholarly collecting in their specific subjects.

The library has been fortunate, moreover, in having among its friends, various patrons who have spared neither expense nor effort in securing for it valuable scientific classics, and whose continued interest has made possible the acquisition of choice and rare titles as such volumes come upon the market. Chief among such patrons are: S. P. Avery, J. P. Morgan, Anson W. Hard, Cleveland H. Dodge, and Ogden Mills. During the past year the Anson W. Hard fund made possible the acquisition of that stupendous work of natural history and archæology produced as a result of the Napoleonic occupation of Egypt: Description de l'Égypte, ou recueil des observations et des recherches qui ont été faites en Égypte, pendant l'expédition de l'armée Française [1798-1801]. The series had long been urgently desired for comparative work with the specimens secured by the Museum's own expeditions into Africa. Chief among other accessions of the year are the many splendid items from the Frederic Gallatin, Jr. Collection of Books on Ornithology, which were purchased and presented to the library by Mr. Ogden Mills. Some of the more important of these titles are:

- Catesby & Edwards Natural History of Carolina. London 1731-1748. 2 vols.
- Diggles, S. The Ornithology of Australia, n. d. Queensland.
- Elliott, Wm. Carolina Sports. Charleston 1846. First Edition.
- Jerdon, T. C. Illustrations of Indian Ornithology. Madras 1847.
- Meyer, H. L. Illustrations of British Birds and their Eggs. London 1835-41.
- Nozeman & Houttuyn. Niederlandische Vogelen. Amsterdam 1770-1829. Original Edition.

Spix, J. B. de. Avium Species novae quas in itinere annis 1817-1820 per Brazilian. Monachii 1840. 2 vols. Wilson & Bonaparte. Illustrations of the American Ornithology. Edinburgh 1835.

These books all filled gaps in the library collections and have already seen considerable active service.

In 1912 the institution received as a gift from its President, Professor Henry Fairfield Osborn, The Osborn Library of Vertebrate Palæontology. This collection, which now numbers upwards of 10,000 books and pamphlets, is installed in a room adjoining the departmental offices, and is administered as a separate unit. This library is remarkably complete and of great intrinsic as well as scientific value. It is able to keep noticeably abreast of the times, due to the continued interest and supervision of its donor.

Intercalated with the collections of the general library are the books belonging to the New York Academy of Sciences, the American Ethnological Society, the Linnæan Society of New York, and the New York Microscopical Society. The deposit of these several libraries has been of especial value in supplying and completing the literature on their respective subjects, and in unifying the several exchange lists under one management of vastly broadened scope. This arrangement has proved to be of mutual benefit. The library has secured for its use new collections of exchange material; the societies have now the careful and regular administrative supervision of the material due them on exchange basis, and the advantageous pooling in one place of the various specialized periodicals.

While the Library of The American Museum of Natural History was created so specifically and directly for the support and assistance it might give to the research and work of the Museum itself, it has by no means been content to confine its sphere of usefulness to the work immediately at hand. Besides the fact that its reading rooms are open to the public for reference work, it has been glad to coöperate with sister libraries and institutions in the development of the loan of books inter se. By this method, which marks indisputably the modern trend of library economy, the resources of one institution are available to others. It has been our privilege to extend the courtesy of inter-library loans to institutions of learning from London and Hamburg to Tokio, and as occasion has arisen we have been permitted to borrow from other libraries as well.

Besides the work for its clientele of scientists, the library may be said to have made several contributions to library science. The staff have taken the attitude that the library, if vital, must be growing, and if growing, must be subject to change and revision. Consequently it has at times been almost a laboratory of experiment as well as a storehouse of treasure. Although the decimal system of classification was adopted in 1902, it has been found advisable at various times to modify and supplement the standardized system in many of its details. Preëminent among such innovations is the classification of anthropological literature elaborated in cooperation with the anthropologists of the institution and adopted in 1914. In this scheme, culture area divisions have been substituted for the usual divisions of political geography.

The review of fifty years' activities shows a growth from a single volume shelved in the office of a curator, to a library of over 100,000 volumes housed in modern stack-rooms and administered by a corps of trained librarians. Such a résumé, while stimulating, would prove of the utmost danger if it permitted any undue satisfaction with the present state of library conditions. To adequately fulfil its mission the library must have opportunity to expand directly in proportion to the growth of the institution as a whole. The creation of every new department, the undertaking of every new piece of research work, the departure of every new expedition, the installing of every new exhibit, entails new demands upon the library. Through the generosity of the institution, these demands have been gradually met in the past. The immediate future calls for further increase in stack room, and the employment of additional assistants.

The publications of The American Museum of Natural History for the year have been the Bulletins, the Memoirs, the An-Publications thropological Papers, the Novitates, Natural History—the Journal of The American Museum of Natural History, the Handbook and the Guide Leaflet.

The Bulletin is devoted to the publication of the results of field and laboratory work. During 1921, Volume XLIV of the Bulletin was issued, containing twenty articles: one on Ichthy-

ology, seven on Herpetology, three on Lower Invertebrates, seven on Palæontology and two on Ornithology. The total number of pages for Volume XLIV is 612, with 233 text figures and 26 plates. Article 8 of Volume XLIII appeared in September, 1921, and closed this volume of Congo Reports. It contained 95 pages, 30 plates and 22 text figures.

The *Memoirs* are composed of scientific monographs extensively illustrated. During 1921, two *Memoirs* were issued, one on the "Structure and Relations of Notharctus, an American Eocene Primate," with 140 pages, 127 text figures and 45 plates, and the other on "Camarasaurus, Amphicœ lias, and other Sauropods of Cope," with 194 pages, 84 text figures and 36 plates.

The Anthropological Papers are devoted entirely to the results of field work and other researches conducted by the anthropological staff. In the year 1921 five parts have appeared, including articles on the "Kiowa Sun Dance," "A Few Andamanese Skulls with Comparative Notes on Negrito Craniometry," "The Sun Dance of the Plains Indians," "The House of the Great Kiva at the Aztec River and Pueblo Bonito." The total number of pages is 797, with 163 text figures, 1 plate and 9 tables.

The Novitates are devoted to the publication of preliminary announcements and descriptions of new forms. The first numbers of this series were twenty-nine, issued during 1921, with a total of 220 pages, 63 text figures and 1 plate. Of these, four are on Mammalogy, two on Ichthyology, one on Invertebrate Palæontology, four on Vertebrate Palæontology, two on Lower Invertebrates, one on Geology, four on Entomology and seven on Ornithology.

Natural History has completed its twenty-first volume.

A new edition of *Handbook* No. 2, "Indians of the Southwest," has been published, and the following *Guide Leaflets* were issued during the year: No. 28, "Habitat Groups of North American Birds" (third Edition); No. 36, "Evolution of the Horse" (new Edition); No. 41, "Indians of Manhattan Island" (third Edition); No. 52, "The Hall of the Age of Man"; No. 53, "The Story of Museum Groups." New editions of the *General Guide* were also issued.

SUMMARY OF THE PROGRESS OF THE MUSEUM DURING THE YEAR 1921

The constructive work of the year 1921 will become apparent in future years. The entire plans of the Museum, from top to bottom, have been restudied and submitted to careful and critical examination by the Trustees and by the members of the Scientific Staff. We desire so far as possible to avoid mistakes in design, and, in recommending to the City and to our generous citizens the seven proposed new building sections which will cost not less than \$9,000,000 when equipped, we hope to provide for an *ideal American Museum Building*.

In such a building, the American Museum ideals set forth in the early pages of this report may be carried out. It is evident that Astronomy will be the central feature of our plan because all the processes of earth's history and all the processes of life center around original astronomic causes. Astronomy, at the moment, is the most inspiring of all the sciences. It makes the greatest appeal to the imagination; it gives man a sense of his own insignificance and dependence upon higher powers.

We are confident that within the next decade, perhaps within the next five years, plans for an Astronomic Hall, which were set forth by the President in his *History*, *Plan and Scope of The American Museum of Natural History* in 1910, received by the Trustees February 14, 1910, and confirmed by the Trustees at several successive annual meetings, will be realized.

Respectfully submitted,

9 Roman Strategy and

HENRY FAIRFIELD OSBORN, President.

Finances, Maintenance, Endowment

For the first time in the history of the Museum, the annual operating expenses have exceeded a million dollars, of which the City has provided approximately one third.

The disbursements are made under an itemized budget, approved by the Trustees at the Annual Meeting, which is followed closely throughout the year. At least quarterly, or even more frequently, a full statement of the financial condition of the Museum is rendered to the Board. Thus the Trustees are enabled to make any necessary modifications of the budget, as the work of the year progresses.

The details of the receipts and disbursements of the several accounts are given in the Treasurer's Report, pages 123 to 135. The form and arrangement of this statement differs somewhat from those of former years. In order to present the details in a more compact form wherever practicable the receipts and disbursements of an account are given on a single page.

The general summary of all the accounts is as follows:

	OPERATING	ACCOUNTS	:
--	-----------	----------	---

	Receipts	Disbursements	Balances	Deficit
Morris K. Jesup Fund	-			
Account	\$300,228.35	\$278,273.50	\$21,954.85	
General Account	199,681.45	246,479.77	• •	\$46,798.32
City Maintenance				
Account	366,547.46	351,547.46	15,000.00	
Special Funds Account	229,968.23	184,312.25	45,655.98	
Corporate Stock				
Account	19,348.00	19,348.00		
Totals\$	51,115,773.49	\$1,079,960.98	\$82,610.83	\$46,798.32
OTHER ACCOUNTS:		.		
Endowment and Invest-				
ment Account	\$112,120.76	¢42.004.01	¢(0 125 05	
Museum Building Fund	\$112,120.70	\$42,994.91	\$69,125.85	
Account	5,245.52		5,245.52	
Incidental Account	5.487.19	5.004.04	483.15	
Crocker Land Expedi-	5,407.19	3,004.04	403.13	
tion Fund Account.	15,600.00	15,600.00		
	10,000.00	13,000.00		
Totals	\$138,453.47	\$63,598.95	\$74,854.52	
Grand Totals\$	1,254,226.96	\$1,143,559.93	\$157,465.35	*\$46,798.32

^{*}The deficiency in the General Account is due to the fact that expected accrued interest on the balance of the Sage Bequest was not received in 1921. This deficiency, however, is temporary because the accrued interest above mentioned is being reserved to meet this deficiency when the interest is received, which will probably be in 1922.

The Museum's fiscal year dates from January 1, but the interest received on this date is credited to the income of the preceding year. Because of this practice, and the fact that the greater part of interest from endowment is received in January and July, expenditures have to be made before the income out of which they are to be met is received. This necessitates the carrying of a considerable capital fund for the transaction of the Museum's current business. The source of this capital is six notes given by the Trustees to the United States Trust Company of New York, which aggregate \$250,000. The Museum draws on the Trust Company against these notes such sums as are necessary to finance the daily expenditures and pays interest at 5% not on the full amount of the notes but merely on the actual sums required daily. During the current year the debit interest on these bank loans amounted to \$7,563.32. The status of this loan account on December 31 was as follows:

м	A	1130	CREDIT	•
TAT	AXIM	UM	CREDIT	÷

Again, the Advisory Committee on Investments, composed of Mr. Arthur M. Anderson, Mr. Francis D. Bartow, and Mr. Charles E. Mitchell, have rendered signal service to the Museum through their expert advice on investments. The Committee has reviewed the entire holdings of our Endowment Funds and has sold stocks and bonds of a book value of \$71,239 for \$73,702.49, and reinvested the proceeds in securities of better quality or of more permanent character.

The Finance Committee cannot speak in too high terms of the practical and invaluable assistance which the Advisory Committee on Investments has rendered to the Museum.

Respectfully submitted,

H. P. DAVISON,

Treasurer.

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SUMMARY OF CLASSIFICATION THE AMERICAN MUSEUM OF NATURAL HISTORY

Jesup	Fund	General	Account	City Main	NT. ACCOUNT
Salaries	Other Items	s Salaries	Other Items	Salaries	Other Items
Scientific\$186,799.00	\$88,567.79	\$60,468.55	\$43,317.71	\$56,383.81	
Administration		49,436.06	33,429.76	191,707.34	\$17,181.80
Heating and Lighting		1,135.33	9,075.84	23,274.46	16,194.36
Repairs and Construction of Heating and Lighting Repairs and Construction		1,087.60 4.819.96	•	3,161.96 27.672.13	
General Expenses	2,906.7 1	20,982.42	.,	2,,0,2120	.,,
\$186,799.00	\$91,474.50	\$137,929.92	\$108,549.85	\$302,199.70	\$49,347.76
Totals by Account\$278,273Morgan Memorial Hall Fund		,	479,77	351,54	7.46

OF DISBURSEMENTS OF FOR THE YEAR ENDING DECEMBER 31, 1921

SPECIAL FU	unds Acct.	Corporate Stock Acct.	Grand 7		Totals 1921	Totals 1920
Salaries	Other Items	Salaries	Salaries	Other Items		
\$27,791.18	\$66,740.93		\$331,442.54	\$198,626.43	\$530,068.97	\$445,875.35
			241,143.40	50,611.56	291,754.96	263,426.29
			24,409.79	25,270.20	49,679.99	46,021.33
			4,249.56	11,054.25	15,303.81	7,045.59
		19,348.00	51,840.09	12,603.42	64,443.51	49,839.64
		·	20,982.42	17,947.18	38,929.60	31,825.65
27,791.18	66,740.93 532.11	19,348.00 19.348.00	674,067.80	316,113.04	990,180.84	844,033.85
5,420.45	84,359.69		5,420.45	84,359.69	89,780.14	
33,211.63 184,31	151,100.62 2.25		679,488.25	400,472.73	1,079,960.98	•

FRED H. SMYTH, Bursar.

February 6, 1921.

FINANCIAL STATEMENT 1921

PERMANENT ENDOWMENT

	Par Value	Book Value
Morris K. Jesup Fund	.\$6,658,898.07	\$6,073,731.68
General Endowment Fund*	. 1.269.189.28	1.207.878.54
The Sage Fund	. 1,186,250.00	893,320.88
Special Endowment Funds:		
J. P. Morgan Fund	. 325.000.00	324.718.75
Jonathan Thorne Memorial Fund	. 26.884.10	24,997.79
Jonathan Thorne Memorial Fund	. 20,004.10	
Matilda W. Bruce Fund	. 11,000.00	11,000.00
Margaret Olivia Sage Fund	. 11,000.00	9,995.00
Physical Anthropology Fund	. 10,528.55	9,997.59
Anson W. Hard Library Fund	. 5,000.00	5,000.00
	\$9,503,750.00	\$8,560,640.23
Uninvested Cash:	· · · · · · · · · · · · · · · · · · ·	1-,,-
General Endowment Fund\$14,079.12		
The Sage Fund		
	68,982.10	68,982.10
·	40 FF0 F00 10	A0 (00 (00 00
	\$9,572,732.10	\$8,629,622.33

*Principal contributors to the General Endowment Fund:

I Interpar contributors to	uie General	Endowment I und	
Hugh Auchincloss	\$10,223.56	Morris K. Jesup\$	225,000.00
Samuel D. Babcock	5,000.00	A. D. Juilliard	
Anna B. Bliss	5,000.00	Helen C. Juilliard	50,000.00
Emil C. Bondy	10,000.00	Frank W. Kitching	10,043.00
George S. Bowdoin		Charles Landon	5,000.00
Fanny Bridgham	15,000.00	Solomon Loeb	5,000.00
Louisa Combe	39,769.15	D. O. Mills	125,000.00
James M. Constable		Oswald Ottendorfer	30,000.00
Benjamin P. Davis	22,799.25	Percy R. Pyne	45,000.00
Wm. E. Dodge		Wm. Rockefeller	10,000.00
Wm. E. Dodge	10,000.00	Wm. R. Sands	10,000.00
James Douglas		Wm. C. Schermerhorn	5,000.00
Mrs. Martha T. Fiske		Mrs. Mary Stuart	50,000.00
Frederika Gade	5,000.00	Phebe Anna Thorne	5,000.00
H. O. Havemeyer		Charles E. Tilford	25,070.37
Miss S. M. Hitchcock		Mrs. Emily N. Trevor	30,098.90
C. P. Huntington	5,000.00	Cornelius Vanderbilt	25,000.00
Henry Iden		Wm. H. Vanderbilt	50,000.00
D. Willis James		Henry Villard	5,000.00

MUSEUM BUILDING FUND ACCOUNT

Bonds Cash		Book Value \$117,449.54 5,245.52
	\$124,845.52	\$122,695.06

ENDOWMENT AND INVESTMENT ACCOUNT

Receipts, 1921

General Endowment Fund:		
Balance	\$1,916.48	
Bequest of Charles E. Rhinelander	1,000.00	
Bequest of Emma Chambers Jones		•
Bequest of Louisa Combe*		
Patrons	1,000.00	
Fellows	500.00	
Life Members	4,200.00	
Proceeds from Sale of Stocks	9,236.99	\$35,403.62
Morris K. Jesup Fund: Balance Loan from General Account		11,643.75
The Sage Fund:		
Balance	\$224.68	
Proceeds from Sale of Stocks and Bonds		65.070.98
Physical Anthropology Fund:		,
Balance		2.41
Interest on Credit Balances		479.55
· · · · · · · · · · · · · · · · · · ·		
· · · · · · · · · · · · · · · · · · ·		\$112,600.31

"There was also received \$5,000.00, Assigned Portion of a Mortgage, and Stocks and Bonds, \$18,219.00, making a total of \$39,769.15.

Disbursements, 1921

Disbui scincints, 1521	
General Endowment Fund: Purchase of Bonds	\$21,324.50
Morris K. Jesup Fund:	
Subscription to Plan of Bondholders Protective Committee of International Traction Co. of Buffalo 4% Coll. Trust Bonds	11.500.00
	11,000.00
The Sage Fund: Purchase of Bonds	10,168.00
Physical Anthropology Fund:	
Transferred to Special Funds Account	2.41
Interest on Credit Balances (to General Account) Cash on Hand December 31, 1921	479.55 69,125.85
	\$112,600 .31

MORRIS K. JESUP FUND ACCOUNT*

Receipts, 1921

Trustees' Restricted Funds:

Cash on hand January 1, 1921		\$21,310.52
Income from Morris K. Jesup Fund	275,201.65	
Sale of Publications	1,100.83	•
Sales and Exchanges	2,150.80	
Interest on Credit Balances	464.55	278,917.83
· -	<u></u>	

Total net receipts for the development of all departments.... \$300,228.35

Disbursements, 1921

Geology and Invertebrate Palaeontology	\$14,259.90
Mineralogy	2,153.27
Mammalogy	31,113.08
Ornithology	20,207.51
Vertebrate Palaeontology	37,245.44
Comparative Anatomy	6,474.15
President Osborn's Science Fund	7,900.00
Anthropology	25,709.23
Ichthyology	6,864.47
Dr. Dean's Research and Publication Fund	1,200.00
Herpetology	6,777.10
Lower Invertebrates	4,062.54
Entomology	7,631.21
Comparative Physiology	5.34
Public Health	3,113.58
Woods and Forestry	462.00
Library	16,691.05
Public Education	6,340.03
Preparation and Exhibition	51,331.03
Publications	17,276.25
Division of Printing	7,973.85
General Supplies and Expenses	575.76
Interest on Bank Loans	2,906.71
Total net dishurgements for the development of all department	

Total net disbursements for the development of all departments..... \$278,273.50 Cash on hand December 31, 1921 †

21,954.85

\$300,228.35

*Disbursements of this account are made as the Board of Trustees may direct, for the purchase of specimens, for the expenses of field parties, and for the support of scientific work. †The Treasurer's books show a balance on hand December 31, 1921, of \$21,954.85, which

has been carried forward to 1922 to meet pledges and obligations contracted in 1921.

GENERAL ACCOUNT

Receipts, 1921

Trustees' Unrestricted Funds:

Cash on hand January 1, 1921Income from General EndowmentIncome from The Sage FundSolutionSolutionSolutionAnnual MembersSustaining MembersSolutionSolutionSales and ExchangesSubscriptions to Natural History2,053.26	\$3,350.00
Contributions of Trustees for General Purposes: George F. Baker \$2,500.00 George F. Baker, Jr. 1,000.00 Frederick F. Brewster 1,600.00 Thomas DeWitt Cuyler 500.00 Henry P. Davison 1,000.00 Cleveland H. Dodge 2,500.00 Walter Douglas 1,000.00 Childs Frick 2,000.00 W. A. Harriman 1,000.00 Archer M. Huntington 1,000.00 Adrian Iselin 1,300.00 Arthur Curtiss James 3,000.00 Walter B. James 375.00 Charles Lanier 750.00 Ogden Mills 3,074.48 J. P. Morgan 1,250.00 Henry Fairfield Osborn 1,250.00 Percy R. Pyne 2,000.00 John B. Trevor 500.00 Felix M. Warburg 2,500.00	
Contributions for General Purposes: \$5.00 M. Glauber \$5.00	
Total net receipts for the development of all departments \$	193,331.45
Contributions of Trustees for General Purposes for 1922: Childs Frick Loans:	3,000.00
Proceeds of Notes held by the United States Trust Com- pany of New York	275,000.00
<u>_</u>	\$474,681.45

GENERAL ACCOUNT*

Disbursements, 1921

Geology and Invertebrate Palaeontology	\$6,303.11	
Mineralogy	1,852.47	
Mammalogy	5,322.11	
Ornithology	3,903.75	
Vertebrate Palaeontology	2,674.67	
Comparative Anatomy	677.73	
Anthropology	26,676.18	
Ichthyology	2,605.43	
Herpetology	599.38	
Lower Invertebrates	4,494.51	
Entomology	2,504.00	
Public Health	3,862.85	
Library	5,556.40	
Public Education	12,355.19	
Preparation and Exhibition	4,520.84	
Publications	23,353.44	
Division of Printing	12,231.09	
Heating and Lighting	12,722.70	
Repairs and Installation	12,567.00	
General Supplies and Expenses	35,578.79	
Administration	45,214.63	
Pension Fund	16,246.89	
Interest on Bank Loans	4,656.61	
Total net disbursements for the development of all departmer Loans:		\$246,479.77
Bursar's Account Crocker Land Expedition Fund Account Endowment and Investment Account	15,600.00	
Balance December 31, 1921;		52,184.75
Proceeds of Notes held by United States Trust Company of New York to meet overdrafts		**176,016.93
		\$474,681.45
*The Trustees' Unrestricted Funds are applied to the ger Museum, including the deficiency in maintenance.	ieral purp	oses of the
**The balance of December 31, 1921, is the remainder of the Notes held by the United States Trust Company of New		
the Notes held by the United States Trust Company of New		
York of		\$250,000.00
Balance December 31, 1921	5176,016.93	
LOANS RECEIVABLE:		
Crocker Land Expedition Fund Account	15,600.00	
Endowment and Investment Account Disbursements made in anticipation of the Accrued Inter- est of the Sage Bequest	11,584.75	
est of the page perfection	TU,7 70.32	\$250,000.00
***Deficit as shown Orders and contracts outstanding of 1921 account	\$46,798.32	
Contributions of Trustees for General Purposes for 1922		
(Paid in 1921)	3,000.00	
Actual Deficit of 1921	\$56,000.00	

Receipts, 1921		
GEOLOGY AND INVERTEBRATE PALAEONTOLOGY: Angelo Heilprin Exploring Fund: Balance	\$2,000.00	
James Douglas Geological Fund: Balance	850.00	\$2.850.00
MINERALOGY: Matilda W. Bruce Fund: Balance \$532.11 Interest	\$1,192.11	<i>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</i>
J. P. Morgan Fund: Interest	5,000.00	6,192.11
MAMMALOGY: George S. Bowdoin Whale Model Fund: Balance	\$1,000.00	
Third Asiatic Expedition Fund: \$7,426.48 Thomas W. Lamont	\$37,532.98	
Fourth Akeley African Expedition Fund: Ogden Mills	5,000.00	43,532.98
ORNITHOLOGY: Crandall Oological Fund: Balance	\$1,160.00	
Margaret Olivia Sage Fund: \$391.06 Balance 427.88 Interest	818.94	
Whitney South Sea Expedition Fund: Balance \$5,323.30 Harry Payne Whitney 20,000.00	\$25,323.30	
Panama Bird Fund: Mrs. Clement A. Griscom, Jr	1,000.00	28,302.24
Carried forward		

Disbursements, 1921

MINERALOGY:

Matilda W. Bruce Fund: Purchase of Minerals	\$255.85	
J. P. Morgan Fund: Publication of List of Crystal Forms	314.57	\$570.42

MAMMALOGY:

Third Asiatic Expedition	Fund:
Field Expenses in China	\$30,457.25

Fourth Akeley African Expedition Fund:

Field Expenses in	Africa		
		-	 35,457.25

Ornithology:

Margaret Olivia Sage Fund:		
Field Expenses in Ecuador	\$327.78	
Whitney South Sea Expedition Fund:		
Field Expenses in Tahiti		22,598.24
Carried forward	•••••	\$58,625.91

Receipts, 1921

Brought forward	•••••	\$80,877.33
VERTEBRATE PALAEONTOLOGY: Edward D. Cope Biography Fund: Balance		
Mrs. Julia Cope Collins 100.00	\$300.00	
Pleistocene Faunal Life Scenes Fund: Balance	50.00	
American Pliocene Fund:Balance\$3,017.31Anonymous8,750.00	\$11,767.31	
Childs Frick European Fossil Fund: Balance	φ11,7 <i>0</i> 7.51	
Refund European Expenses	227.28	
Balance	1,000.00	
South Asiatic Field Fund: Balance	10,000.00	
J. P. Morgan Fund: J. P. Morgan	16,250.00	20 504 50
COMPARATIVE ANATOMY: W. B. Dickerman Horse Preparation Fund: Balance	\$1 000 00	39,594.59
Evolution of Man Fund: Childs Frick	, ,	
American Pliocene Fund: Anonymous	. 1,000.00	3,000.00
ANTHROPOLOGY: East Asiatic Fund: Balance Anthropology of the Southwest Fund:	. \$913.49	
Balance \$24.46 Archer M. Huntington 5,000.00	E 024 46	
Physical Anthropology Fund:	5,024.46	
Balance \$133.84 Interest 448.55	582.39	6,520.34
Carried forward	-	·

in account with H. P. DAVISON, Treasurer	131
SPECIAL FUNDS ACCOUNT	
Disbursements, 1921	
Brought forward	\$58,625.91
VERTEBRATE PALAEONTOLOGY:	
American Pliocene Fund: Services of Preparators, and Field Expenses in Europe \$3,799.34	
Childs Frick European Fossil Fund: Purchase of Specimens	
South Asiatic Field Fund: Field Expenses in India 2,505.10	
J. P. Morgan Fund: Special Grant, Honorary Curator's Research and Publication Work	22,364.44

W. B. Dickerman Horse Preparation Fund:	
Services of Preparator\$1,000.00	
Evolution of Man Fund:	
Special Services	1,121.90

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ANTHROPOLOGY:

Anthropology of the Southwest Fund:	
Expenses of Field Work\$4,825.78	
Physical Anthropology Fund:	
Purchase of Equipment 568.68	
	5,394.46
Carried forward	\$87,506.71

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Receipts, 1921

ICHTHYOLOGY: Cleveland H. Dodge Ichthyology Fund: Balance	
Dish Dillismasha Reads	
Fish Bibliography Fund: Balance\$1,033.91	
Bashford Dean	2.948.08
Lower Invertebrates:	4,940.00
Rotifera Fund: Frank J. Myers	266.38
Entomology:	
Entomological Fund: \$100.00 B. Preston Clark \$100.00 F. Wm. Gertzen 100.00 Otto R. Koechl 100.00 Herbert F. Schwarz 810.00 Miss Emily E. Schwarz 100.00 Miss Ida T. L. Schwarz 100.00 H. N. Thurston 100.00 \$1,410.00	
Clark Haitian Expedition Fund: B. Preston Clark	.910.00
LIBRARY :	,910.00
Anson W. Hard Library Fund: Interest	212.50
PUBLIC EDUCATION: School Fund: Department of Education of the City of New York \$2,076.25	
Jonathan Thorne Memorial Fund: Balance	
Interest 1,084.20	
\$3	8,394.96
PUBLICATIONS: Museum Iournal Fund:	
William M. Savin \$122.40	
Jesup North Pacific Expedition Publications Fund: Balance	
The second state in the second s	1,244.05
George F. Baker),000.00
Total net receipts for the development of specific departments \$229 Interest on Credit Balances	,968.23 1,259.82

in account with H. P. DAVISON, Treasurer	133
SPECIAL FUNDS ACCOUNT	
Disbursements, 1921	
Brought forward	\$87,506.71
ICHTHYOLOGY:	
Fish Bibliography Fund: Services of Bibliographer	1,800.00
LOWER INVERTEBRATES	
Rotifera Fund:	
Purchase of Equipment	266.38
ENTOMOLOGY :	
Entomological Fund: Purchase of Specimens and Field Equipment\$1,010.00	
Clark Haitian Expedition Fund:	
Expenses of Field Work	1,510.00
LIBRARY :	
Anson W. Hard Library Fund: Purchase of Books	212.50
Public Education:	
School Fund: Loaning Slides to Public Schools\$2,076.25	ι.
Jonathan Thorne Memorial Fund:	
Education for the Blind 1,037.87	3,114.12
PUBLICATIONS :	
Museum Journal Fund: Special Illustrations for Natural History	122.40
Morgan Memorial Hall Fund:	
Alteration and Installation	89,780.14
Total net disbursements for the development of specific departments.	\$184,312.25
INTEREST ON CREDIT BALANCES:	
Transferred to General Account	1,259.82
CASH ON HAND DECEMBER 31, 1921	45,655.98
	\$231,228.05

CITY MAINTENANCE ACCOUNT* Receipts, 1921

Capital Fund: Cash on hand January 1, 1921	\$13,669.56	
Department of Parks (Appropriation for 1920) Expenses for Other Than Personal Service		
Department of Parks (Appropriation for 1921) Salaries, Regular Employees Expenses for Other Than Personal Service:	.\$302,199.70	\$15,000.00
1. Fuel Supplies \$12,782.00 2. Office Supplies 6,377.91 3. Laundry, Cleaning and Disinfecting Supplies 2,040.50 4. Motor Vehicle Supplies 924.00 5. General Plant Supplies 2,675.75 6. Wearing Apparel 1,155.00 7. Office Equipment 1,386.00 8. General Plant Equipment 577.50 9. General Plant Materials 9,432.50 10. General Repairs and Replacements 6,160.00 11. Telephone Service 847.00 12. Fixed Charges and Contributions 4,989.60		
Total net receipts for the maintenance of all departments . Interest on Credit Balances		369.32
		\$366,916.78
Disbursements, 1921		
Geology and Invertebrate Palæontology	. \$4,047.07	
Mineralogy	. 3,330.53 5,093.60	
Mammalogy		
Ornithology		
Vertebrate Palæontology		
Ichthyology		
Herpetology		
Lower Invertebrates		
Entomology	3,856.86	
Library		
	9,928.72	
Public Education	11,086.01	
Public Education Preparation and Exhibition	11,086.01 1,659.87	
Public Education Preparation and Exhibition Division of Printing	11,086.01 1,659.87 5,323.86	
Public Education Preparation and Exhibition Division of Printing Heating and Lighting	11,086.01 1,659.87 5,323.86 47,452,38	
Public Education Preparation and Exhibition Division of Printing	11,086.01 1,659.87 5,323.86 47,452,38 49,079.60	

Total net disbursements for the maintenance of all departments......\$351,547.46 369.32 Interest on Credit Balances (to General Account)..... Capital Fund: 15,000.00 Cash on hand December 31, 1921

Capital Fund:

^{\$366,916.78}

^{*}The annual appropriation of the City can be used only for the maintenance of the Museum and is inadequate for this purpose. It cannot be used for the purchase of specimens or for the expenses of exploring and collecting expeditions. The deficiency in maintenance for 1921, amount-ing to \$154,472.10, has been met from the Trustees' General Account.

CROCKER LAND EXPEDITION FUND ACCOUNT

1921

Receipts: Loans:

Loans: General	Account		 	 	\$15.600.00
Interest of	on Credit	Balances	 	 	05
					\$15,600.05

Disbursements:

Deficit of 1920 Account\$	15.597.71
Interest on Credit Balances. Transferred to General Account	.05
Cash on hand December 31, 1921	
	15,600.05

INCIDENTAL ACCOUNT 1921

Receipts:

Cash on hand January 1, 1921 Received from Individuals and Societies	. \$150.33
Interest on Credit Balances	. 7.04
	\$5,494.23

Disbursements:

Disbursements for Individuals and Societies	. \$5,004.04
Interest on Credit Balances. Transferred to General Account	
Cash on hand December 31, 1921	
	\$5,494.23
-	

MUSEUM BUILDING FUND ACCOUNT

1921

Receipts:

Cash on hand January 1, 1921 Income from Investment Fund	\$98.71 5,086.00
Interest on Credit Balances	60.81
Disbursements:	5,245.52
Cash on hand December 31. 1921\$	\$5 245 52
	5,245.52

CORPORATE STOCK ACCOUNT

1921

Receipts: Department of Parks \$19,348.00 Interest on Credit Balances 3.91 \$19,351.91 \$19,351.91
\$19,351.91
\$19,351.91
\$19,351.91
Disbursements:
Payrolls of Mechanics, etc\$19,348.00
Payrolls of Mechanics, etc
. \$19,351.91
All the foregoing accounts have been
Firemined and (FFILLY M WARPING)
Examined and Approved F. & O. E.
Approved Thomas Devill Coller Auduling Commutee
NEW YORK, December 31, 1921 H. P. DAVISON, Treasurer

Membership

The national character of the American Museum of Natural History and the breadth of its appeal are indicated by the geographical distribution of its members. Every state in the Union is represented in our membership list, and there are ninety-one members who are residents of foreign countries. The summary of distribution is given below.*

Alabama Arizona California Colorado Connecticut Delaware District of Col Florida Florida Idaho Illinois Indiana Iowa Kansas Kentucky Louisiana Maine Maryland	10 9 3 115 258 11 75 15 19 3 98 17 17 9 5 18 13 50	Massachusetts Michigan Minesota Mississippi Missouri Montana Nebraska Newada New Hampshire New Jersey New Mexico New York State North Carolina . North Dakota Ohio Ohio Pennsylvania Rhode Island	1 19 234 9	South Carolina . South Dakota Tennessee Texas Utah Vermont Virginia Washington Washington West Virginia Wyoming New York City Virgin Islands Philippine Islands Alaska Total	1 2 4
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Belgium 1 Brazil 2 British Guiana 1 Canada 30 China 2	Denmark 1 England 18 France 11 Germany 2 India 1 Ireland 1 Italy 3	Natal1Nicaragua2Norway2Peru2Siam1
Brazil 2 British Guiana 1 Canada 30 China 2	France 11 Germany 2 India 1 Ireland 1	Nicaragua 2 Norway 2 Peru 2 Siam 1

* Data of February 21, 1922.

Grand Total. 6,161

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In 1921, 890 new names were added to our membership, the total number of members on December 31 being 6,151, showing a large number of friends aiding us in our educational work.

Members receive current copies of our Journal, Natural History, which sets forth the results of recent exploration and research, in popular style, by eminent scientists and explorers. The magazine is copiously illustrated by field photographs.

On the third floor of the Museum is the Members' Room, a pleasant place to rest during visits to the Museum. Members desiring to have the most interesting features of the exhibits shown them may make known their wishes to the attendant in this room, and an instructor will meet them.

Every year, besides the regular courses of lectures for Members, a number of special illustrated lectures are given, to which Members are welcome.

The American Museum of Natural History, in conjunction with certain other museums, is reciprocating with the Buffalo Society of Natural Sciences in the exchange of membership privileges. When a Member of the American Museum visits the Museum of the Buffalo Society of Natural Sciences and presents his membership card at the office, the privileges accorded its Members will be accorded the Member of the American Museum. This plan, with which we are heartily in accord, was suggested by the Buffalo Society of Natural Sciences, with the hope that such a step would promote the friendly relations already existing between these museums, encourage and stimulate the interest of Members, and serve to increase scientific knowledge.

Some of the lectures and meetings to which Members were invited are the following:

The Spring Course of Lectures to Members included: "Wild Life on Mullein Hill," by Dallas Lore Sharp; "Thirty Thou-

Lectures for Members sand Miles in China," by Charles K. Edmunds; "Five Years with the Birds of the Congo Jungle," by James P. Chapin; "Camouflage in Nature and in War," by Gerald H. Thayer.

The Autumn Course was as follows: "The Way of the Sperm Whaler," by Robert Cushman Murphy; "Over the Andes of Southern Ecuador," by H. E. Anthony; "New Zealand and Its Nature Wonders," by C. E. Cummings; and "Travels in Siam and Java," by Henry E. Crampton.

The Spring Course for the Children of Members was as follows: "The Calendar of the Animals," by Raymond L. Ditmars; "Hiawatha," by Ruth E. Crosby; "Neighbors of the Sand and Sea," by George H. Sherwood; "The Spring Awakening of the Flowers," by G. Clyde Fisher. The Autumn Course: "Big Bears and Other Wild Animals at Home," by Norman McClintock; "Indian Stories and Songs," by Princess Atalie Unkalunt; "Water Babies," by Roy W. Miner; "Peter Rabbit's Neighbors in Fur and Feathers," by Thornton W. Burgess.

The American Museum of Natural History and the American

Special Lectures Special a lecture on "Yellowstone Park—Last Stand of the Old West," by Horace M. Albright, on

January 7.

The first public showing of the motion picture film, "The Living World," made by Mr. George E. Stone, was held in our auditorium on February 16.

A reception for Madame Curie was given by the New York Academy of Sciences, the American Museum of Natural History, and the New York Mineralogical Club in the Museum on May 17.

On Armistice Day, November 11, a tablet was dedicated to the Men in the World War who entered the armed service of their country under the auspices of Local Board, Division No. 129, of the City of New York.

A reception for the Intercollegiate Cosmopolitan Club was given on January 4, at which time the film "How Life Begins" was shown and explained by Dr. G. Clyde Fisher.

The number of new Members enrolled during 1921 was 890, of which 58 were Life Members. The loss through death and

Status of Membership Membership

		Fellows Honorary Fellows	
Associate Founders	10	Life Members	938
Patrons	119	Sustaining Members Annual Members	
Associate Members	(non-r	esident) 1,353	,

NEW MEMBERS

The following were elected Associate Benefactors: CHILDS FRICK MRS. HENRY C. FRICK

HARRY PAYNE WHITNEY

The following were elected Patrons: SIDNEY M. COLGATE ARTHUR A. FOWLER OSWALD W. UHL The following were elected Honorary Fellows: GEORGE K. CHERRIE MADAME MARIE SKLODOWSKA CURIE The following were elected Life Members through contribution of One Hundred Dollars:

J. V. AGUILERA JOSEPH PARSONS MRS. FRANK E. AIKEN CURT G. PFEIFFER JOHN ASPEGREN JOHN S. PHIPPS MISS VIRGINIA FRANCES BALLARD R. STUYVESANT PIERREPONT MRS. ROBERT WOODS BLISS JOHN T. PRATT Mrs. Clifford V. Brokaw EVELYN PRESTON PIERRE C. CARTIER HENRY C. QUINBY CHARLES M. CHAPIN MRS. HENRY R. REA CHARLES CHENEY DONALD ROWELL S. WILBUR CORMAN MRS. ROBERT S. RUSSELL MISS CORNELIA SAFFORD JAMES CARR DUNN MISS ADELIA A. DWIGHT WILLIAM M. SAVIN STEVENSON SCOTT George , L. Eaton MAYNARD D. FOLLIN A. VAN HORNE STUYVESANT, JR. EMANUEL GERLI WARREN THORPE WALTER ALFRED HAFNER I. H. TOWNE ARTHUR S. VERNAY FENLEY HUNTER Mrs. Columbus O'D. Iselin JENNIE E. B. WEBSTER O'DONNELL ISELIN HUGO WEIGERT George L. Nichols CORNELIUS AYER WOOD Mrs. John W. T. Nichols Mrs. A. A. Zucker The following were made Life Members through Honorary Election: EDGAR B. BRONSON, JR. MENGO L. MORGENTHAU MISS ELIZABETH VERNON MISS MARGARETHE BRONSON WATSON POTTER Mrs. William H. Collins MISS EMILY E. SCHWARZ F. WILLIAM GERTZEN MISS IDA T. L. SCHWARZ MRS. AUGUSTUS KIRKHAM* H. N. THURSTON OTTO R. KOECHL COL. JOHN C. F. TILLSON, U.S.A. PROF. A. LACROIX MRS. LAWRENCE L. TWEEDY COMMENDATORE BARTOLOMEO MAZZA FU CRESCENZO J. M. VANDERGRIFT * Deceased.

The following have become Sustaining Members:MRS. E. F. DWIGHTMRS. OTTO H. KAHNGERARD FOUNTAINEUGENE S. LA BARLYMAN P. HAMMONDMRS. WM. R. PETERSE. C. HENDERSONM. TAYLOR PYNEMISS M. I. HENDERSONHAROLD S. SLOANISRAEL UNTERBERG

DECEASED MEMBERS

Fellow Phillips Phoenix Life Members

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Samuel T. Peters
M. TAYLOR PYNE
JAMES A. SCRYMSER
FRANCIS LYNDE STETSON
THOMAS L. WATSON
Henry deForest Weekes
George Peabody Wetmore
is appended.

Respectfully submitted,

PERCY R. PYNE,

Secretary.

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LIST OF TRUSTEES AND TERMS OF SERVICE 1869-1922

The Mayor of the City of New York	1908-
The President of the Department of Parks	
The Comptroller of the City of New York	
Auchincloss, Hugh	
Baker, George F.	
Baker, George F., Jr	
Bickmore, Albert S.	
Bishop, H. R.	
Blatchford, Richard M	
Blodgett, William T	
Bowdoin, George S	
Brewster, Frederick F	
Choate, Joseph H	
Colgate, Robert	
Constable, James M	
Cutting, R. Fulton	1014_1010
Cuyler, Cornelius C	1004-1009
Cuyler, Thomas DeWitt.	
Dana, Chas. A.	
Davison, Henry P.	1916-
Dodge, A. G. Phelps	
Dodge, Cleveland H.	1904-
Dodge, W. E., Jr.	1872-1903
Douglas, James	1909-1918
Douglas, Walter	
Drexel, Joseph W.	1872-1888
Elliot, Daniel Giraud	1915-1915
Field, Benjamin H.	1869-1893
Frick, Henry C.	.1914-1919
Gerry, Elbridge T.	.1894-1902
Grant, Madison	. 1911-
Green, Andrew H	.1869-1903
Grinnell, Moses H.	.1869-1872
Haines, William A.	.1869-1880
Hard, Anson W.	.1894-1917
Harriman, Oliver	.1878-1895
Harriman, William Averell	.1918-
Havemeyer, H. O.	.1898-1907
Havemeyer, Theodore A.	. 1891-1897
Haven, George G	1895-1908
Hewitt Abram S.	.1874-1903
Huntington, Archer M	1914-

Report of the Secretary

Hyde, Frederick E.	.1899-1909
Hyde, James H	.1903-1907
Iselin, Adrian	. 1869-1905
Iselin, Adrian	
James, Arthur Curtiss	. 1903-
James, D. Willis	. 1889-1903
James, Walter B.	.1911-
Jesup, Morris K.	.1869-1908
Juilliard, A. D	
Kissel, Gustav E.	.1894-1911
Landon, Charles G	
Lanier, Charles	
Low, Seth	
Mills, D. O	1882-1910
Mills, Ogden	. 1910-
Morgan, J. Pierpont	1869-1913
Morgan, J. P	1908-
Morton, Levi P	1889-1890
Osborn, A. Perry	
Osborn, Henry Fairfield	
Ottendorfer, Oswald	1886-1900
Parish, Henry	1869-1872
Potter, Howard	1869-1880
Pratt, George D	1921-
Pyne, Percy R	1872-1895
Pyne, Percy R	
Robb, J. Hampden	
Rockefeller, William	
Rogers, Archibald	
Roosevelt, Theodore	1869-1878
Roosevelt, Theodore	1886-1891
Roosevelt, Theodore	
Sanford, Leonard C	
Sherman, Benjamin B	
Stebbins, Henry G.	
Stevens, Frederic W.	
Steward, D. Jackson	
Stuart, Robert L	
Trevor, John B	1872-1888
Trevor, John B	1908-
Vanderbilt, Cornelius	
Warburg, Felix M.	1910-
Wickersham, George W.	
Whitney, William C.	
Wolfe, John David	1869-1872

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December 31, 1921

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MISS CAROLA WOERISHOFFER*

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Koenig, Adolph, M.D. Little, Arthur D. Marshall, Edwin J. Marshall, John W. Koessler, Karl K. Little, Prof. Homer P. Krohn, Irwin M. Livingood, Chas. J. Marston, Howard F. Kuhn, Frank Martin, Frank G. Livingston, Kuhn, Guido Major Archibald R. Martin, Wm. Barriss Kuhn, Robert Lloyd, John Uri Mason, Dean Lloyd, J. T. Masson, John G. La Boiteaux, Lodge, F. S. Matson. Geo. C. Miss Lydia M. Lofthus, O. E. Matthews, W. C. La Forge, Laurence Logan, Frank G. McAllister, M. Hall Lampland, Carl O. Lomb, Carl F. McBride, Donald Land, W. J. G. Lovejoy, F. W. McCallie, S. W. Lane, H. H. Lovett, Edgar Odell McCamant, Wallace Lane, L. L. Lowber, James W., McCaskey, Hiram Dryer Ph.D., Sc.D. McDonell, Agnes Lange, Miss Mathilde M. Lowrie, A. L. McFarland, G. W. Langford, Mrs. A. G. Luce, Matthew McGregor, Tracy W. Langford, George Ludlow, Dr. Clara S. McHatton, T. H. Lankford, J. S., M.D. Lyding, Jos. B. McKenna, Large, Henry Ranney Lyford, Edwin F. Mrs. Reginald, J. P. Laughlin, Lyman, Herbert McLachlin, Dan. Mrs. Geo. M., Jr. Lyman, Storrs H. McMath, F. C. Lawrence. Lyon, Marcus W., Jr. McNair, Edward E. Mrs. Annie W. Lytle, J. W. McNairy, Amos B. Leach, Mrs. Anna Meckes, Edgar A. Leadbetter, F. W. Macauley, Alvan Melvin, Hattie E. Leaird, Byron MacColl, James R. Memminger, C. G. LeBlond, Richard K. MacCurdy, Mengel, J. Hain Mercer, William R. Lee, Mrs. George B. Prof. Hansford M. Lee, George C. Mershon, Wm. B. Mack. Edwin F. Lee, H. Shumway MacNab, Miss T. Mae Metcalf, John Brockway Lees, James H. Meyer, J. Henry Macnamara, Charles Legrand, J. Federico Macrum, William Millard, Fillmore Leiter, Joseph Madeira, Mrs. B. C. Miller, E. A. Lemly, Major Henry Madeira, Elizabeth Miller, Louise Klein Rowan, U.S.A. Main, Frank H. Miller, Paul H. Miller, Shirley P. Le Moyne, Francis J. Malcolm, Mrs. Arthur Lenihan, Ernest P. Manchester, Dr. L. B. Milligan, Dr. Robert Leonard, A. G. Mangold, Anne Millis, John Leonard, Frederick W. Mann, Elbert B. Mills, Enos Lerche, William, M.D. Manton, W. P., M.D. Mills, Frank S. Leverett, Frank Mapes, Mrs. N. H. Mills, Wilson W. Levy, Dr. Ernest C. Marble, Richard Merrill Mills, Wm. C. Lillie, Frank R. Markey, John C. Mitchell, Walter S. Lindsay, A. M., Jr. Marlatt, Charles Lester Moffett, F. L. Linford, Jas. H. Marlow, Frank William Molera, E. J. Linsley, Prof. Earle G. Marsh, Geo. E. Molineux, Lionberger, I. H. Marsh, M. C. Mrs. Elizabeth M.

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Putnam, Frederic L. Pyatt, Charles W. Quain, Buell H. Radcliffe, Lewis Railsback, J. B. Rakestraw, John L. Rand, Mrs. Emily M. Rand, Herbert W. Rathbone, Gerald L. Ray, F. B. Rayevsky, Charles, M.D. Raymond, H. W. Rea, Paul M. Read, L. C. Reahard, Ralph M. Rebmann, Redwood, Mrs. Francis Tazewell Reed, H. D. Reese, Albert M. Regar, H. Severn Rehn, James A. G. Remington, Seth P. Reynolds, Dr. Edward Rhodes, James M. Rice, Prof. Wm. North Schatz, Fredk. Richardson, Russell, M.D. Richardson, W. D. Ricketson, Walton Ricketts, Dr. L. D. Ridgway, Robert Riesman, David, M. D. Ripley, Joseph Roberts, G. Brinton Roberts, Rev. George Roberts, Thos. S., M.D. Robertson, Carl T. Robertson, Mrs. Lucy H. Rochester. De Lancey, M.D. Rockwell, I. E. Roehlke, A. F. Rogers, A. O. Rogers, Joseph M.

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Spangler, Harry A., M.D. Spaulding, Rolland H. Spencer, G. J. Sperry, George B. Sprague, A. A., 2d Sproul, Miss Cleona C. Stanley, Mrs. D. S. Starr, Charles S. Stauffer, Clinton R. Steiner, Bernard C. Stephan, John F. Stephenson, B. W. Sterling, J. M. Sternberg, Charles H. Stevens, Henry G. Stevens, J. P. Stewart, Colin C., Ph.D. Stidham, Harrison Still, Dr. George A. Stillman, Dr. Charles C. Stone, Miss Stone, Frank Stone, Julius F. Stowe, Franklin D. L. Strealy, M. W., D.D.S. Stuart, Dr. P. E. Studley, J. Edward Sturges, Rush Sturgis, S. Warren Swain, W. Moseley Swan, Mrs. J. Andrews Swart, W. G. Swarth, Harry S. Swarthmore College Library Sweet, Henry N. Sweetser, Albert R. Swenson, Dr. Carl G. Swift, Carleton B. Synnott, Thos. W. Tate, J. M., Jr. Taylor, Mrs. A. P. Taylor, A. Robena Taylor, Mrs. E. A. Taylor, Edward B.

Taylor, Hollinshead N. Taylor, Knox Tennent, David H. Terrell, Clyde B. Terry, Jay Tetrault, P. A. Thayer, George A. Thomas, Abram Owen Thomas, C. H. Thomas, Elmslie Timbs Thomas, Samuel Hinds Thomes, Robt. S. Thompson, A. W. Thompson, John W. Thurston, Emory W. Tickell, Alfred H., M.D. Todd, James Todd, Dr. Joe H. Toro, Carlos Townsend, J. Barton Townshend, Henry H. Trotter, Wm. Henry Elisabeth W. Tucker, Allen B. Tucker, Chas. Edward Tullock, H. S. Tunks, Rev. Walter F. Turman, A. E. Turner, Miss Helen G. Tyson, Carroll S., Jr. Uihlein, Edgar J. University of Pittsburgh, Department of Mining Geology, School of Mines Urmston, J. K. Utter, Henry E., M.D. Vaillant, G. W. Valentine, Colonel Henry Lee Van der Laan, Dr. J. Van Devanter, Willis van Houten, J. Van Rossun, Miss Lee van Santvoord, Seymour Verbeck, Gen. Wm. Vermillion, Mary S.

Verrill, A. E. Vibert, Charles W. Wadsworth, Samuel Wadsworth, Samuel F., M.D.V. Wagner, Samuel Tobias Waldo, Edward H. Waldron, L. R. Walker, Sir Edmund Walker, Elda R. Walker, Harrington E. Walker, Hiram H. Walker, Miss Lydia M. Walker, Thaddeus Wall, Ashbel T. Wallace, Herbert I. Wallace, W. W. Walton, W. J. Wamback, Carolyn Ward, Mrs. William T. Warren, Dr. E. T. Warren, George C. Washburne, A. C. Watson, Thomas A. Webb, Gerald B., Jr. Webb, Walter F. Weber, Louis Webster, Dr. Ralph W. Weed, Rt. Rev. Edwin G. Weed, Lewis H. Wegeforth, Harry M. Wehrle, Augustine T. Weidner, M. Robert, M.D. Weis, Dr. Joseph D. Weiss, Albert P. Welch, Louis C. Welcher. Rev. Manfred P. Weld, Elizabeth F. Weller, Stuart Welles, F. R. Wells, Edward P., 2d Wells, H. Gideon, M.D. Welsh, Dr. Lillian Welsh, Robert F. Weniger, Dr. Wanda

Wernigk, Dr. R. Wickstrom, Miss Ruth Wislocki, George B., West, Dr. Frederic Beall Wight, Dr. Otis B. M.D. Wetherill, Richard Wilcox, Edwin J. Wolcott, E. R. Whalley, Miss Muriel E. Wilcox, Walter D. Wolverton, B. C. Will, George F. Wheeler, Charles Wood, Baldwin Wheeler, H. C. Willcox, Prof. Mary A. Wood, Mrs. Richard L. Wheelwright, Wm. D. Willetts, Woodbury, Lieut.-Col. Whelan, Ralph Ernest W., M.D. Frank Thomas, U.S.A. Whelden, Roy M. Willey, Arthur Woods, Chas. M. Wherry, Wm. B. Williams, David W. Woodward, Lemuel Fox Whipple, B. F. Williams, Woodwell, John White, Alain C. Dr. Gardner F. Wright, A. B. White, Andrew S. Williams, Henry P. Wright, Albert Hazen White, Dr. Charles J. Williams, Ira A. Wright, Mrs. Eva Edgar White, Dudley Williams, Ralph Wright, White, E. Grace Williamson, E. B. Miss Harriet H. White, Dr. Joseph A. Willits, Dr. J. Pearson Wright, John S. White, Philip T. Willock, J. Scott Wright, Robert C. White, Ralston Wilson, Charles Branch Wurlitzer, Rembert Wilson, Herrick E. White, Walter W., M.D. Wyer, Samuel S. White, Wm. Henry Wilson, Dr. J. Howard Whiting, Dr. Henry A. Wilson, Rev. Yarnall, Charlton Whitnall, Harold O. Robert, D.D. York, George W. Wilson, Robert, Jr., M.D. Young, Stanley P. Whitney, David C. Whitney, Willis R. Windle, Ernest Whittell, George Winston, William O. Zapffe, Carl Whittemore, Harris Winter, Dwight Zimmerman, John B.

ACCESSIONS, 1921

DEPARTMENT OF PUBLIC EDUCATION

By GIFT

MISS MARY APPLETON, Newport, R. I. 102 Mounted photographs of trees (5x8) and 3 books.

- COMMONWEALTH OF AUSTRALIA (through A. Hunt), Melbourne, Australia.
- 50 Photographs of Australian scenes. WILLIAM H. BRETTMAN, Greenwich, Conn.
 - Red-tailed Hawk.
- MISS LAURA B. BROOMALL, Far Rocka-
 - Iss LAURA B. BROOMALL, Far Rockaway, L. I., N. Y.
 Parula Warbler, 2 Maryland Yellow-throats, 1 Starling, 1 Cedar Waxwing, 2 Catbirds, 1 Flicker, 1 Towhee, 3 Hermit Thrushes, and 1 Fox Sparrow.
- T. DONALD CARTER, Boonton, N. J.
- 30 Birds (mounted), 2 chipmunks (mounted), 1 flying fish (mounted), 1 Weasel, 1 Ostrich egg. MISS MAUDE S. CLARK, New York City.
- Collection of shells, minerals, rocks, seeds, fossils, and 2 stuffed birds.
- MRS. JULIUS HENRY COHEN, Elmsford, N. Y.
 - Starling.
- CORTICELLI SILK MILLS, Florence, Mass. Lecture set of Lantern Slides with manuscript.
- RUSSELL CORYELL, Chatham, N. J.
- 200 Lantern slides of Japan and China.
- EDISON LAMP WORKS (Lighting Service Department), Harrison, N. J.
 - Mounted photographs (interior 7 views of the Museum).
- EDUCATIONAL FILM CORPORATION, New York City.
 - 460 Feet of motion picture film "Man-O'-War Race."
- DEPARTMENT OF ENTOMOLOGY (Transfer).
 - 24 Lantern slides.
- FAMOUS PLAYERS-LASKY CORPORATION, New York City.
 - 405 Feet motion picture film entitled "A New Search for the Oldest Man."

- MISS ELLOISE FELTZ, New York City. Mounted Parrot.
- MRS. L. J. FRANCKE, Glen Head, L. I., N. Y.
- Junco, in the flesh.
- MRS. A. C. GONZALEZ, New York City. Barred Owl, mounted.
- CLARENCE W. HAHN, New York City. 7 Dozen lantern slide plates.
- L. HENRY & Co., New York City.
- 5 Cases of Birds, skins, wings, etc.
- Dr. E. O. Hovey, New York City. 13 Negatives of Hudson River (4x5).
- DR. ROLAND G. ISRAEL, New York City.
 - 5 Negatives made in the White Mountains of New Hampshire.
- DR. ROBERT CUSHMAN MURPHY, New York City.
 - 25 Negatives (4x5);2 negatives (5x7); 101 colored and 19 uncolored lantern slides.
- NATIONAL ASSOCIATION OF AUDUBON SOCIETIES (through T. Gilbert Pearson, President).
- 10 Natural Goura (crowns of the Goura pigeon); 10 natural Para-dise, full size (plumes of the Lesser Bird of Paradise); 10 natural Paradise, diminutive size (plumes of the Lesser Bird of Paradise); 10 Black Paradise (dyed); 10 made-up Paradise ornaments: 90 small madeup Paradise ornaments; 10 Heron aigrettes (bundles of 40 plumes or sprays each); 500 plumes and semiplumes of the Snowy Egret. Joнn T. Nichols, New York City. 9 Birds' nests.

- JOHN H. NOLL, Arlington, N. J. 8 Beetles, 1 Luna Moth, 9 Birds, 8 Birds' eggs.
- DR. GEORGE H. PATTERSON, New York City.
- 2 Bald Eagle skins, from Baronoff Island, Alaska. Orville Phillips, West Nyack, N. Y.
- Yellow-billed Cuckoo.
- ERNEST THOMPSON SETON, Greenwich, Conn.
 - 3 Thrushes and 1 Sparrow, in the flesh.

- M. P. SKINNER, Yellowstone Park, Wyo.
- 10 Photographs of Yellowstone Park. LIONEL SLAGLE, West Nyack, N. Y. Screech Owl.
- H. T. STAFFORD, Blauvelt, N. Y.
- Starling.
- TASMANIAN GOVERNMENT, Tasmania, Australia.
 - 50 Photographs of Tasmanian scenes; handbook and pamphlet of Tasmania.
- HARRY S. TRULL, New York City. Model of fish-net.
- Albert VAN LOAN, Norwalk, Conn. Robin's nest.
- NORMAN WALMSLEY, New York City.

- Mounted Crow. ELMER J. WATSON, Nyack, N. Y. Long-eared Owl, in the flesh. THEODORE WEYRAUCH, New York City. 1 Red Bat, 1 Yellow-bellied Sapsucker.
- LUPTON A. WILKINSON, New York City. 31 Glossy prints, 10 color plates.
- WOODCRAFT LEAGUE OF AMERICA. 270 Photomailers (5×7) .
 - BY PURCHASE
 - 25 Colored lantern slides.
 - 14 Photographs.
 - 23 Mounted Birds.
 - 17 Colored bromide photographs, from Japan.

DEPARTMENT OF GEOLOGY AND INVERTEBRATE PALÆON-TOLOGY

BY GIFT

- DR. F. I. Allen, New York City. Slab containing Olenellus and Hyo-
- lithes. HON. RECAREDO AMENGUAL N., Inten
 - dente de Tarapaca, Chile. 4 Ammonites, freed from matrix; 1 Ammonite imbedded in shale; 3 Ammonites (fragments) in nodules; 3 internal casts of Pelecypods in fine-grained magnesian limestone; 8 internal casts of Gastropods in fine-grained magnesian limestone; 8 casts Pelecypods freed from matrix; 2 Pelecypods; 4 Brachiopods; 1 block weathered limestone showing fossils; 4 blocks showing Dendrites; 3 masses Calcareous tufa; 5+ nodules "Region Andina"; 10 pebbles, etc.

- H. C. BAILEY, Sulphur, Okla. A fragment about 7 inches long and 5 inches wide at the widest end, showing mold of seven chambers of an Orthoceras.
- JOHN BALMER, New York City.
- Pholas borings, from County Londonderry, Ireland. CHARLES L. BERNHEIMER, New York
- City.
- 5 Glaciated boulders.
- MRS. M. J. BLUEN, New York City.
- 3 Pieces polished Fossil Coral, 1 fragment Calcareous tufa.
- BOARD OF WATER SUPPLY, City of New York.
- Fossil tree stump, from Gilboa, N. Y. CHARLES F. Z. CARACRISTI, Macuto, Venezuela.
- Tertiary shells, from Tortuga Island. COLORADO MUSEUM OF NATURAL HIS-TORY, Denver, Col.
- Palæovespa species (Scudderi Cockerell), from Florissant, Col. José G. Correia, Livingston, Cal.
- Calcareous tufa.
- Joseph Dixon, New York City.
- Diamondiferous rocks and gravel.
- DR. KENNETH P. EMORY.
- 6 Pliocene corals.
- DEPARTMENT OF ENTOMOLOGY (Transfer).
- 2 Tertiary spiders, Florissant, Colo. MRS. L. W. FERRIER, New York City.
- Mississippian Brachiopods and frag-mentary Pelecypod molds, from Santa Fé, New Mexico. EDWARD J. FOYLES, New York City.
- 159 Fossils from the Mississippian era of Kentucky.
- J. B. HASTINGS, San Francisco, Cal. Cave photographs: 56 views of Leh-
- man's Cave, Nevada, and vicinity. MRS ELIZABETH HILL, Brockton, Mass. 4 Fossil specimens from near Wind-ham, N. Y. DR. ALEX. LAMBERT, New York City.
- Color photographs of Yosemite Valley (4×5) ; 6 Color photographs of Grand Canyon (5x7).
- MRS. H. W. LEITCH, New York City. 80 Specimens; mounted thin sections of Corals and Stromatoporoids from the estate of the late James Hall. ALFRED LEWIS, New York City. Specimen of Conglomerate.

- DEPARTMENT OF LOWER INVERTEBRATES (Transfer).
 - Fossil Coral (limestone rock near Arecibo, Porto Rico).

- THOMAS OLLIVE MABBOTT, New York City.
- Nummulites, from Syria or Palestine. DEPARTMENT OF MINERALOGY (Transfer).
 - Enlarged clay models of protoconchs of 12 genera Gastropods of different degrees of enlargement; 4 sets of casts, 3 complete sets of plaster casts therefrom. Prepared by Dr. A. W. Grabau.
- MINING MUSEUM (through George W. Card), Sydney, Australia.
 - Warialda Meteorite (Siderite), 93.1 gms. after polishing.
- DR. FRANK OVERTON, Patchogue, L. I., N. Y. 12+ Limonite specimens (bog ore)
 - about roots of plants, from Corona, L. I., sandbank.
- HERMANN PAPKE, Weehawken Heights, N. J.
 - Specimen of Fossilized wood, from Staten Island, N. Y.
- P. B. DE RANTENFIELD, Wanksieu, China. 14 Trilobites in shale rock.
- WALTER E. RICH, Brooklyn, N. Y. Model of Mt. Shasta.
- DR. CHARLES H. TOWNSEND, New York City.
 - Corroded Limestone dredged from depth of 100 feet, Georgian Bay, Ontario, Canada.
- DR. WILLARD G. VAN NAME, New York City.
 - 2 Sea Urchins, 8 Brachiopods, 1 valve Oyster, 2 undetermined.
- DEPARTMENT OF VERTEBRATE PALÆON-TOLOGY (Transfer).
 - Fossils from Abyssinia, Egypt, Asia Minor, and Isle of Wight. Collected by Barnum Brown.
- A. L. VOGE, New York City.
- Iron-stone concretion.
- CHARLES D. WALCOTT, Washington, D. C. Photographic enlargements illustrating the structure of the Trilobite gene-ra Neolenus, Calymene, Ceraurus, and Isotelus.
- M. P. WELCHER, Hartford, Conn. Clay-dogs from Button Island, Lake Champlain.

BY PURCHASE

- 10 Specimens of Volcanic Glass; 2 Moldavite, 2 Billitonite, 2 Australite.
- 92 Fossils, from Nottheim and Aland.

- 4 Meteorites; Mt. Ayliff, South Af-rica, P. E. 236 gms.; Rodeo, Du-rango, Mexico, P. E. 76.5 gms.; Alessandria, Valley of San Giuliano, Itolic foromete 200 gms. Vicente Italy, fragments 8.8 gms.; Vigarano Piave, near Ferrara, Italy, 333.3 gms.; San Cristobal, Antofagasta, Chile, 856 gms.
- 16 Specimens of Crinoids and Trilo-bites, from Gerolstein, Prussia.
- 26 Specimens of Middle Cambrian Fossils, from Burgess Pass, British Columbia.
 - THROUGH MUSEUM EXPEDITIONS
- Fossils from New York, New Jersey and Pennsylvania. Collected by C. A. Reeds and P. B. Hill.
- Fossils and rocks from the Beekmantown formation of Vermont. Collected by E. J. Foyles.

DEPARTMENT OF MINERALOGY

By GIFT

- FREDERICK I. ALLEN.
- 3 Marmolite, from Hoboken, N. J.
- HON. RECAREDO AMENGUAL N., Intendente de Tarapaca, Chile.
- Series of Chilean Niter Minerals: 100 specimens, from Province of Tarapaca, Chile.
- SIMON BAUSCH, Plum Tree, N. C. 1 Amphibole (Asbestos), 1 Epidote, 1 Hematite, from Plum Tree.
- MRS. M. J. BLUEN, New York City. Thomasite (Chlorastrolite), from Michigan.
- JOSEPH DIXON, New York City.
- 4 Alluvial Diamonds, from Murfreesboro, Ark.
- MRS. L. W. FERRIER, New York City. 5 Agates, 2 Mica Schist and 6 Obsid
 - ian, from New Mexico; 1 Agate from Sheridan, Wyo.
- NICHOLAS FULCO, Jersey City, N. J. 13 Chalcedony, from Houston, Tex. Miss Anna H. Greene, New York City.
- 2 Carnotite and 1 Metahewettite with Carnotite, from Paradox Valley, Montrose Co., Col.
- HARRY F. GUGGENHEIM, New York City. 417 Specimens of Copper Minerals, from Chuquicamata and Rancagua, Chile.
- Mr. HAVELINE, New York City. 2 Pyrolusite, from New Ross, Nova Scotia.

- ALFRED C. HAWKINS, Wilmington, Del. Sillimanite, from Wilmington, Del.
- CHARLES W. HOADLEY, Englewood, N. J.
 - 2 Specimens of Stilbite and Heulandite, from Montgomery Co., Pa.; 2 Specimens of Epidote, from Stockholm, N. J.; Specimen of Dewey-lite with Galena, Franklinite and Calcite, from Franklin, N. J.
- DR. EDWARD F. HOLDEN, Ann Harbor, Mich.
- Sarcopside, from Deering, N. H. W. SPENCER HUTCHINSON, Boston, Mass.
 - Pascoite, 1 Hewettite, from Mina
- Ragra, Peru. B. T. B. HYDE, New York City. Bottle of Uranium Ore, from Arizona. DR. J. W. L. JONES, Tiffin, Ohio.
- 6 Specimens of Calcite, from Kelleys Island, Ohio, and 7 Celestite. from Tiffin, Ohio.
- CHARLES LANIER, New York City (through Dr. George F. Kunz). Chalcedony statuette "Pas de Danse,"
- by M. Tonnelier. MENGO L. MORGENTHAU, New York City. Official Trapping of a Vizier of Mo-rocco of about 1750 A. D., an assemblage of Aquamarines set in Gold, surrounded by smaller stones of Diamond, Sapphire and Garnet. ARTHUR ROEDER, New York City.
- Carnotite, from Long Park, Paradox Valley, Montrose Co., Col. CHARLES SCHWARZ, Long Island City,
- N. Y.
 - 2 Specimens of Copper from Michigan.
- D. TENNY, Brooklyn, N. Y.
- Smoky quartz crystal, from Orio, Africa.
- BRECK TROWBRIDGE, New York City.
- Brucite, from New York City.
- LUIGI VOLPE, New York City.
- Aragonite on Sulphur, from Cianciana, Italy.

By Exchange

- PROFESSOR AURELIO DEL RIO, LA., DEL CHOPO No. 10, Mexico, D. F., Mexico.
 - Orthoclase (Adularia) Valencianite, from Guanajuato, Mexico.
- JOHN HALLIGAN, Pocantico Hills, N.Y. Quartz.
- H. PAPKE, Weehawken Heights, N. J. 1 Apophyllite, 3 Calcite, 1 Calcite and Datolite, 10 Datolite, 3 Chalcopyrite, 1 Gmelinite on Datolite, 1 Heulandite, 1 Laumontite on Datolite, from

Snake Hill, N. J.; 1 Calcite, 1 Gyp-sum pseudomorph, 1 Gypsum and Taumasite, from West Paterson, N. J.; 1 Pyrite and Succinite, from Kreischerville, S. I., N. Y. LOUIS REAMER, Short Hills, N. J. Anorthoclase, from Springfield, N. J. GEORGE S. SCOTT, New York City.

- 2 Specimens of Orpiment encrusting Fluorite, from Manhattan, Nev.
- J. C. UTMAN, Ashland, Wis. 7 Psilomelane and 1 Hematite, from Ironwood, Mich.

By PURCHASE

(General Fund)

89 Specimens of Minerals from various localities; Prehnite, Calcite, and Natrolite; Enargite with Quartz and Pyrite, from Butte. Mont.; Metahewettite, from Par-adox Valley, Montrose Co., Col.; Tschermigite, from Sweetwater Co., Wyo.

(Matilda W. Bruce Fund)

- 52 Specimens of Minerals, from various localities;
- 35 Specimens Silver Ore, from of Mexico;
- 2 Aragonite on Sulphur, from Cianciana, Italy.

DEPARTMENT OF LOWER **INVERTEBRATES**

By GIFT

ANONYMOUS.

- Abnormal claw of Blue Crab, from Barnegat Bay, N. J. 11 Starfish, 1 Crustacean, 5 Sea Fans,
- and 1 Sea Urchin.
- MRS. ALMA C. AUB, New York City. 6 Shells.
- MISS MARY C. BECKWITH, Brooklyn, N. Y.
- Barnacle (Chelonibia patula), from west coast of Florida. Mrs. Julius Beer, New York City.

- Shell rock, from Anastasia Island, off St. Augustine, Fla. CAPT. E. G. BIGGLE, R.M.S. "Caronia." Squid (rare and of large size): Characteritic Attended Versill Sthenoteuthis pteropus Verrill.
- BROOKLYN MUSEUM (through Dr. R. C. Murphy).
 - Vial of Round Worms, from South Georgia Islands, 2 vials of Plankton, from Peru.

BARNUM BROWN.

- Miscellaneous collection of Invertebrates: chiefly Crustacea, Mollusks, Echinoderms, and Polychætes, from Abyssinia and French Somaliland (600 specimens); collection of land shells from British Somaliland (1000 specimens).
- DR. LUCIUS C. BULKLEY, Riverdale, N. Y.
 - Collection of shells (100), from west coast of Southern Siam.
- H. R. CALDWELL, Yenping City, Fukien, China.
 - 4 Crabs, 1 Centipede, and 4 freshwater Clams, from Yenping, China.
- Тне LATE Henry Α. CASSEBEER (through Remsen Williams, Long Ìsland City, N. Y.). Coral (large) and 2 Sea fans.
- ESTATE OF DR. TITUS MUNSON COAN. 75 Lots of Hawaiian Achatinellid land shells and 10 Butterflies, from Hawaiian Islands.
- PROF. T. D. A. COCKERELL, Boulder, Col.
 - 10 Specimens of identified land shells, from Azores.
- DR. BASHFORD DEAN (through Dr. R. C. Murphy).
 - Wax model of encysted distome.
- DR. BRYSON D. DELAVAN, New York City.
 - 97 Corals, 5 Sponges, 2 Shells, 3 Barnacles, and 1 Sand Dollar.
- MRS. L. W. FERRIER, New York City. Collection of Shells and Echinoderms, from California and Florida.
- DR. G. CLYDE FISHER, New York City. Fresh-water Sponge, from Woods Lake, Me.
- REV. W. H. FLUCK, Great Kills, S. I., N. Y.
- 78 Shells, from Flatrock River, Ind.
- F. FOSTER, David, Republic of W. Panama.
- Section of piling bored by *Teredo*. MARSHALL R. GAINES, New Brighton, S. I., N. Y.
 - 22 Specimens of Helix hortensis and 13 specimens of Galba palustris desidiosa (land and fresh-water shells), from New Brighton, S. I., N. Y., and Marthas Vineyard, Mass.
 - 11 Specimens of Physa gyrina (shells).

H. M. GREENIDGE, Fort Jay, Governors Island, N. Y.

Collection of shells, Corals, Insects, etc., from Panama.

- J. F. HAVILAND, Brooklyn, N. Y. 4 Scorpions, 1 Tarantula, and 1 Centi-
- pede.
 V. C. HEILNER (through J. T. Nichols).
 3 Specimens of Crustacea (1 Stomatopod and 2 Macrura), from Bahamas.
- DEPARTMENT OF HERPETOLOGY (Transfer).
 - 19 Specimens of land shells, from Tahiti, Society Islands. Collected by R. H. Beck.
 - 2 Specimens of *Pentastomida* (from trachea of a Bushmaster snake), from South America.
- MILTON C. HERRMANN, Belgrade Lake, Me.

Specimen of Gordius villoti, from Belgrade Lake, Me.

- LAWRENCE J. HIRSCH, New York City. Large sponge, from Caicos Island, West Indies.
- DEPARTMENT OF ICHTHYOLOGY (Transfer).
 - 7 Crayfish and 1 Shrimp.
- FRED KESSLER, New York City.
- 3 Starfish, from Freeport, L. I., N. Y. J. H. LADEW, New York City.
- Rock specimen tunneled by "Boring Piddock," from Hoods Inlet. Alaska.
- MISS MARY E. LOCKWOOD, New York City.
- Bear's paw Clam shell, from Hawaii.
- THOMAS O. MABBOTT, New York City. Collection of shells, from Florida. GEORGE E. MCDONALD, New York City.
- 2 Gorgonians, from Rangoon, Burma.
- HERMANO NICEFORO MARIA, Medellin, Colombia.

Crab, from Santa Rosa, Colombia.

T. B. MCLEAN, Ocean Grove, N. J. Hermit Crab, from beach at Ocean Grove, N. J.

FRANK J. MYERS, Ventnor, N. J. 43 Slides of mounted and identified Rotifers. Watson Microscope.

Slide Cabinet for Protozoa Collection.

- NAGELE BROTHERS, New York City. Sea-urchin.
- EMANUEL Oppenheimer, Chewelah, Wash.

Several specimens of Diatomaceous Earth ("Tripoli"), from Chewelah, Wash.

- ROSENBERG LIBRARY, Galveston, Tex. 20 Specimens of marine and land
- shells, from Galveston Island, Tex. CARL SANDGREN, New York City.
- Starfish (Asterias forbesi) from City Island, N. Y.
- FRED SCHNEIDER, New York City.
 - Squid (Loligo pealii) taken from a Black Sea Bass weighing 4 pounds, from Chesapeake Bay.
- HARLAN I. SMITH, Ottawa, Canada.
- Fresh-water Mussel, from Atnarko River, Atnarko, B. C. MRS. JESSE MERRICK SMITH, New York City.
 - Collection of Shells, Minerals and In-
- dian relics, etc. (300 specimens). G. C. SPENCE, Monton, Eccles, England. Brachypodella nidicostata (shell), co-type, from Chichirivichi, Venezuela. PROF. H. W. STUNKARD, New York City.

- 13 Microscopic slides of Blood Flukes, including two holotypes; 3 Lots of shells from Cold Spring, Putnam Co., N. Y.
- MISS IDA TEED, New York City.
 - Collection of marine and land shells, including Chitons, Barnacles, and Echinoderms, from California and Texas.
- HOWARD THURSTON, Ocean Grove, N. J. Abnormal Claw of Lobster, from Ocean Grove, N. J. PROF. RALPH G. VAN NAME, New Ha-
- ven, Conn.
 - Vials of Invertebrates (Insects, Crustaceans, and Worms), from Portland Creek, Newfoundland.
- J. E. WORSFOLD, New York City. 2 Specimens of Nerita peloronta (shells), from West Indies.

By Exchange

- DR. CHARLES CHILTON, Christchurch, New Zealand.
 - 2 Vials of Amphipods: Talorchestia quoyana, Elasmopus neglectus (12 specimens), from Moko Hinou Islands, Auckland, N. Z., and Gis-borne, N. Z.
- DR. C. MONTAGUE COOKE, Honolulu, H. I.
 - 202 Specimens of identified land shells, from Hawaiian Islands, including 17 paratypes and 22 topo-types of 7 species.

- MRS. IDA S. OLDROYD, Stanford University, Cal.
 - 14 Specimens of identified Echinoderms and 14 specimens of unidentified Echinoderms, from Puget
- Sound, Wash. (8 species). J. R. le B. TOMLIN, Reading, England. Collection of Shells (132 identified species, including 2 types and 1 co-type), from Lifu, Loyalty Islands, and Singapore. WILLIAM H. WEEKS, Brooklyn, N. Y. 217 Specimers of identified a bulk
- - 217 Specimens of identified shells, obtained from Denmark and other localities.

By PURCHASE

Various invertebrates, from Naples, Italy, and Woods Hole, Mass.

THROUGH MUSEUM EXPEDITIONS

- Millipede, from Rio Pindo, Ecuador. Collected by H. E. Anthony.
- Collection of land shells and other Africa invertebrates, and from Asia Minor. Collected by Barnum Brown.
- 60 Vials containing Myriapods, worms, land shells, and Isopods, from Pacific Islands and Far East. Collected by Prof. H. E. Crampton.
- Collection of Invertebrates, from Mt. Desert Island, Me., and Woods Hole, Mass. Collected by Roy W. Miner.
- Collection of Shells, Crabs, and Centipedes, from South Sea Islands, including 17 specimens of land shells, from Tahiti. Collected by R. H. Beck.
- 695 Lots of miscellaneous invertebrates, from Lower California. Collected by Dr. Charles H. Townsend, 1911, on the "Albatross Expedition."

DEPARTMENT OF ENTOMOLOGY

BY GIFT

- CHARLES ALLGOEVER, New York City. Live pupa of the Imperial Moth, from Long Island, N. Y.
- DR. A. N. AVINOFF, Napanoch, N. Y. 5 Lepidoptera.
- CHARLES H. BALLOU, Obrapia, Repub-lica de Cuba.
- 56 Insects, from Isle of Pines.
- DR. LÉON BAYER, Brussels, Belgium. 3 Coleoptera, from Africa.

E. L. BELL, Flushing, N. Y.

- 224 Lepidoptera, from various localities; 2 Diptera and their prey; 182 Insects of various orders.
- Dr. JOSEPH BEQUAERT, New York City. 94 Insects, from various western states.
- W. S. BLATCHLEY, Indianapolis, Ind. 8 Beetles, from Florida.
- BROOKLYN MUSEUM (through Dr. R. C. Murphy).
 - 17 Specimens of Arachnida, including 5 paratypes, from Peru.
- BARNUM BROWN.
- 286 Insects, from Abyssinia.
- HARRY R. CALDWELL, Fukien, China. 676 Insects, from China.
- SAMUEL E. CASSINO, Salem, Mass. 64 Lepidoptera, from Peru and Honduras.
- COL. M. L. CRIMMINS, Fort Sam Hous-ton, Texas.
 - Phasmid, from Camp Bullis, Texas.
- WARBURTON DAVIDSON, Chungking, West China.
 - About 500 Lepidoptera, from Chungking.
- WILLIAM T. DAVIS, New Brighton, S. I., N. Y.
 - 2 Spiders, Phidippus dorsalis-paratypes, from Southern Pines, N. C. Type specimen of *Platypedia lati*pennis, Douglas Spring, Col.
- E. W. DEMING, New York City.
- About 35 Insects, from Colombia. W. C. DUKES, Mobile, Ala.
- 79 Lepidoptera, from Alabama.
- L. P. Ebwards, Mammoth Cave, Ky. 5 Cave crickets, from Great Onyx Cave, Ky.
- DR. EDMUNDO ESCOMEL, Arequipa, Peru. 155 Specimens of insects, crustaceans, etc., from Peru. Alfredo Faz, Santiago, Chile.
- 90 Hymenoptera, From Chile. Dr. G. C. FISHER, New York City.
- 98 Insects, chiefly Lepidoptera, from Maine.
- F. H. HAINES, Winfrith, Dorset, England.
 - 7 Living specimens of Argyroneta aquatica, from England.
- GAYLORD C. HALL, New York City.
 - 9 Coleoptera from above the timber line, Mt. Washington, N. H., and A from Privice Columbia A Logi 4 from British Columbia; 4 Lepi-Mt. Washington, doptera from N. H., and 50 from Alaska; 14 Bees, from Field, British Columbia.

- H. S. HARBECK, Philadelphia, Pa. 52 Diptera.
- ARTHUR S. HOFFMAN, New York City. 2 "Vegetable" Caterpillars, from New
- Zealand. FRANK MORTON JONES, Wilmington, Del.
 - Basilarchia, from Biloxi, Miss.; 1 134 Specimens of Lepidoptera from Bermuda, and 2 cocoons of Callosamia carolina Jones, from which cotypes emerged, from South Carolina; 122 Insects, various orders, from southern United States.
- DR. MORTON S. KAHN, New York City. 12 Insects, from Mitchell Co., Ga.
- C. R. KELLOGG, Foochow, China.
- Insects, etc., from which medicines are procured, from Foochow, China.
- S. KLEENE, Hartford, Conn. Aberrant Butterfly, from Hartford, Conn.
- S. M. KRoss, New York City. 3 Moths and 1 Scorpion, from Judean Mts., Palestine.
- FRANK R. MASON, Germantown, Pa. 13 Beetles from South America and West Indies.
- W. C. MATHIAS, Portland, Ore.
- 43 Lepidoptera, from Northwestern United States.
- G. B. MERRILL, Gainesville, Fla.
- 30 Beetles, from Maine and Florida. MUSEUM OF ZOÖLOGY, University of Michigan, Ann Arbor, Mich.
 - 84 Bumble bees.
- J. T. NICHOLS, New York City. 5 Lepidoptera, from Long Island. Type specimen of Heteroderes nich-
- olsi, from Jacksonville, Fla.
- H. Noble, New York City. 2 Mutillidæ.
- HOWARD NOTMAN, Brooklyn, N. Y. Coleopteron (Edostethus femoralis Lec.), from Keene Valley, Essex Co., N. Y. Dr. R. Ottolengui, New York City.
- 23 Lepidoptera, from various localities.
- DR. M. O. PETERS, S. S. Huron.
- Beetle (Cerambycid), from Santo Domingo.
- A. S. PINKUS, Hartford, Conn.
- Unique Argynid, from Hartford.
- MISS BRENDA PUTNAM, New York City. Spider and egg cases, from Engle-wood, N. J.
- DR. F. REGNIER, Regnier, Col. 3 Insects, from Regnier, Col.

- S. G. RICH, New York City. 285 Insects.
- CHARLES RUMMEL, Newark, N. J. Sphingid, from Brazil.
- L. S. RUSSELL, Calgary, Alberta.
- 53 Insects, from Calgary, Alberta.
- MANUEL SEGUNDO SÁNCHEZ, Caracas, Venezuela.
- Lantern fly, from Venezuela.
- HERBERT F. SCHWARZ, New York City. 101 Species of Bees purchased from Friese-166 specimens.
- CAPT. FRANK SEELEY, Brooklyn, N. Y. Beetle, from Sierra Leone, Africa.
- SHOW SHIMOTORI, Kyoto, Japan. 8 Insects, from Japan.
- ERNEST SHOEMAKER, Brooklyn, N. Y. 18 Coleoptera and 1 Lepidopteron,
- from Maryland and Virginia. PROF. F. SILVESTRI, Portoco, Italy. 6 Trigona.
- Albert Thomson, New York City. Insects and Bumble-bee Nest, from
- Agate, Neb. UNITED STATES NATIONAL MUSEUM, Washington, D. C.
 - Galls and Gall-insects, including paratypes.
- MISS GERTRUDE VAN WINKLE, New York City.
- Insects, etc., from Garden City, L. I. HARRY B. WEISS, New Brunswick, N. J. Insects, Insect eggs, larvæ and Insect work, from New Jersey.
- L. H. WELD, Washington, D. C. About 40 Galls and Gall-insects, including paratypes. JESSE H. WILLIAMSON, Bluffton, Ind.
- 140 Dragonflies. ENRIQUE WITTE, Loja, Ecuador.
- 170 Insects (mostly Beetles), from Loja, Ecuador.
- WILLIAM C. WOOD, New York City. 6 Lepidoptera, from Florida; 188 Lepidoptera, from various localities. MISS MILDRED WRIGHTSON, New York
- City.
 - Pink Katydid, from New York.

By EXCHANGE

- W. B. COLE, Hinghwa, Fukien Province, China.
- Collection of Chinese Insects.
- UNITED STATES NATIONAL MUSEUM, Washington, D. C.
 - Mesembrinella abundans and Hemichlora vittigera.

BY PURCHASE

25 Lepidoptera, from various localities; about 800 specimens of Indian Hymenoptera; Collection of about 4,000 Lepidoptera.

THROUGH MUSEUM EXPEDITIONS

About 3,500 Insects and Spiders, from Asia, Malaysia, and Australia. Collected by Prof. H. E. Crampton

DEPARTMENT OF ICHTHYOLOGY

BY GIFT

- DR. E. BADE, Glen Head, N. Y. 1 Microscopic slide of the intromittent organ of a Platypoecilus.
- W. LANNOY BRIND, New York City. Male Melanotænia nigrans-Atherine from Sydney, Australia.
- BARNUM BROWN.
- Modern fishes: 104 marine and freshwater specimens, from Abyssinia and French Somaliland.
- ERNEST CLIVE BROWN, New York City. 18 Fresh-water fishes, from Ohio.
- E. J. BROWNELL, Chenango, N. Y. Head of a fresh-water Ling, from Rockwell Mills, Chenango, N. Y. Dr. L. C. BULKLEY, Riverdale, N. Y. 2 Specimens of *Pristis*, saw and
- tooth.
- JOHN CARLSTRÖM, Brooklyn, N. Y. Skeleton of Crucifix Fish, f Georgetown, British Guiana. from
- Тне Late Henry A. CASSEBEER (through Remsen Williams, Long Island City, N. Y.)
 - Sawfish saw, and mounted Porcupinefish.
- Arge Erichsen, New York City.
- Batfish, from Cuba.
- FIELD AND STREAM, New York City.
- 2 Large Pike heads for skeletons, from Jordan, Minn.
- MRS. ARTHUR ELLIS HAMM, New York City.
 - 6 Fossil fishes, from Green River, Wyo.
- INSTITUTE OF JAMAICA, Kingston, Jamaica.
- Colored sketch of fossil tooth of extinct shark (Carcharodon).
- DEPARTMENT OF LOWER INVERTEBRATES (Transfer).
 - 5 China. 10 Gobies. from and mounted fishes, from Mediterranean.

- L. L. MOWBRAY, Miami, Fla. Pipefish, from Bermuda.
- A. J. MUTCHLER, New York City. 8 Poeciliids, from Gainesville, Fla.
- NAGELE BROTHERS, New York City.
- Wide-eyed Flounder (Syacium papillosum).
- New York Aquarium, New York City. 60 Miscellaneous fishes, from Sandy Hook, N. J.; Filefish, from Key West, Fla.
- CAPT. E. E. PETERSON, New York City. Mounted Flying fish; Head of a Barracuda and tail of a Dolphin.
- P. J. REVELL, City Island, N. Y. Angler (Lophius piscatorius), from City Island, N. Y.
- MANUEL RODRIGUEZ, New York City. Otoliths of a Fish (Curubinata), from Venezuela.
- A. S. ROMER, New York City.
- 2 Fossil fishes, from Linton, Ohio.
- B. RUSH, New York City.
- 20 Aquarium fishes (Mollienisia latipinna and Cyprinodon variegatus). Dr. L. C. SANFORD, New Haven, Conn.
- Cast of a large salmon which was caught in Ste. Anne des Monts River, Canada.
- HARRY L. SUPP, Red Bank, N. J. Young Moonfish, from Shrewsbury
- River, N. J. HARRY E. TAYLOR, New York City. Throat bones of a Sea Drum, from beach at Mantoloking, N. J.
- HENRY THURSTON, Ocean Grove, N. J. 1 Ling and 3 young Weakfish.

By Exchange

PROF. H. W. NORRIS, Grinnell, Iowa. Remora, from San Diego, Cal.

By Purchase

207 Chinese Fishes, from Fukien, China; 1 Skin of the "Red Drum"; 31 Fossil Fishes, from Spanish Guiana.

THROUGH MUSEUM EXPEDITIONS

- Eel, from Piti, Guam. Collected by Prof. H. E. Crampton.
 - 12 Catfish, 1 Cichlid, and 1 Gymnotid, from Colombia, S. A. Collected by
 - R. D. O. Johnson. 12 Fishes, 2 Frogs, and 1 Lizard, from Nassau, N. P. Collected by U.T. Nickel. J. T. Nichols.
 - About 550 fresh-water Fishes, from China. Collected by C. H. Pope.

Collection Hawaiian of Marine Collected by Dr. David Fishes. Starr Jordan.

DEPARTMENT OF HERPE-TOLOGY

By GIFT

- J. G. ANDERSSON, Peking, China (through Prof. Dr. Éinar Lönnberg). Alligator, from Antini, Tan Hsien, Wan Ching-Hu, China. Tang-Fu-
- MRS. ALMA C. AUB, New York City. Crocodile jaw bone.
- Adrian Banks, Elmhurst, L. I., N. Y. 5 Frogs, 2 Snakes, and 1 Turtle, from Long Island.
- HERMAN H. BONDER, New York City. Garter Snake.
- BARNUM BROWN.
 - 115 Frogs, Toads, and Tadpoles; 333 Lizards, and 9 Snakes; from Abyssinia and British Somaliland.
 - 1 Toad, 5 Lizards, and 1 Snake, from Asia Minor.
- DR. LUCIUS C. BULKLEY, Riverdale, N. Y.
 - 3 Lizards, 1 Snake, and 2 Turtle Heads.
- T. D. CARTER, Boonton, N. J. Snake, from Boonton, N. J.
- J. P. CHAPIN and R. E. B. MCKENNEY, New York City.
 - 2 Frogs, from Blois, Loir-et-Cher, France.

- France.
 Col. M. L. CRIMMINS, Fort Sam Houston, San Antonio, Tex.
 5 Snakes and 1 Turtle, from Fort Sam Houston, San Antonio, Tex.
 DR. G. CLYDE FISHER, New York City. Salamander, from Lake Champlain, N V
- N. Y. FRANK M. GRAF, San Bernardino, Cal. 18 Lizards, 10 Snakes, 1 Turtle, from San Bernardino, Cal.
- THOMAS HALLINAN, Jacksonville, Fla. 9 Salamanders, 11 Frogs, 44 Lizards, and 1 Snake, from Jacksonville, Fla.

- F1a.
 C. R. HALTER, New York City. Snake, from Cold Spring, N. Y.
 PROF. R. A. HATCHER, New York City. 10 Frogs, from St. Albans, Vt.
 P. VAN CAMPEN HEILNER. Frog, from Hog Island, Bahamas.
 A. W. HENN, New York City.
 16 Salamanders and 10 Frogs, from Shoreham Center, Richville, Vt.

- GERALD HOLT, Ardmore, Okla. 33 Snakes, from Ardmore, Okla.
- B. T. B. HYDE, New York City. 3 Salamanders, from Mt. Washington, Kopake Falls, N. Y.; 2 Salamanders and 3 Turtles from Palisades Interstate Park, N. Y.
- R. D. O. JOHNSON, Beverly, N. J. 84 Amphibians, 9 Lizards, 6 Snakes, and 2 Turtles, from Atrato Region, Colombia.
- DR. MORTON S. KAHN, New York City. Snake, from Georgia.
- WALTER S. KELLY, New York City. 3 Snakes.
- DEPARTMENT OF LOWER INVERTEBRATES
 - (Transfer).
 1 Salamander, 3 Frogs, and 4 Lizards; from California, Dominica, Porto Rico, and Luzon.
- Dr. F. E. LUTZ, New York City.

- Frog, from Brown Mills, N. J. W. DE W. MILLER, New York City. 2 Snakes, from New Jersey. RICHARD MOLDENKE, Watchung, N. J. Snake, from Watchung, N. J. Dr. R. C. MURPHY, New York City. Snake, from Mt. Sinai, L. I., N. Y.
- MUSEUM OF THE AMERICAN INDIAN, New York City.
- 2 Pseudemys elegans, from ruins of Hawikuh, N. M.
- J. MUTCHLER, New York City. Snake, from Greenwich, Conn.
- NEW YORK AQUARIUM, New York City. Turtle, from Lower Mississippi.
- NEW YORK ZOÖLOGICAL SOCIETY, NEW York City.
 - 1 Caiman, 4 Alligators, 2 Lizards, 2
- Turtles, and 10 Snakes; 2 Lizards, 2 Turtles, and 10 Snakes; from Texas, Florida, and Yucatan.
 J. T. NICHOLS, New York City.
 1 Frog and 2 Lizards, from New Providence I., Bahamas; 1 Toad, from Rhinebeck, N. Y.; 2 Snakes and 1 Turtle, from Mastic, L. I., N V N. Y.
- HARRISON W. OTT, New York City. Stuffed Alligator.
- DR. PARDOE, Bound Brook, N. J.
- 2 Snakes, from Bound Brook, N. J. CHARLES Т. RAMSDEN, Guantanamo,
- Cuba. 1 Frog and 1 Lizard, from Guantana-
- mo, Cuba.
 C. H. ROGERS, Princeton, N. J.
 7 Salamanders, from St. Huberts, Adirondacks, N. Y.

- KARL P. SCHMIDT, New York City. Snake, from Stanley, Wis.
- Prof. C. E. SCHNEIDER, Concepcion, Chile.
- 6 Frogs and Toads, 2 Lizards, and 6 Snakes, from Concepcion, Chile.
- HENRY A. SMITH, West Wardsboro, Vt. Snake, from West Wardsboro, Vt.
- Dr. HERBERT J. SPINDEN, New York City.
 - Tadpoles, 4 Toads, 1 Lizard, and 11 Snakes, from Yucatan.
- IRVING K. TAYLOR, New York City.
- Skulls of Crocodiles-assorted 8 sizes.
- H. H. WILCOX, New York City. Turtle.
- J. E. WORSFOLD, New York City.
- Snake, from Trinidad.
- F. R. WULSIN.
- Snake, from Greenwich, Conn.

By Exchange

- ALBANY MUSEUM, Grahamstown, South Africa (through John Hewitt). 14 Frogs, 30 Lizards, 17 Snakes, and
 - 5 Turtles, from South Africa.
- AUSTRALIAN MUSEUM, Sydney, Australia.
 - 53 Amphibians, 112 Reptiles, from Australia, etc.
- BRITISH MUSEUM (Natural History), London, England.
- ' Lizard, from Cofradia, Southern Mexico.
- CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Cal. (through Dr. John Van Denburgh).
 - 62 Amphibians and 164 reptiles.
- CHARLES L. CAMP, New York City. 2 Toads, 30 Lizards, and 1 Snake, from Adamana, Ariz.
- MUSEUM COMPARATIVE ZOÖLOGY, OF
 - Cambridge, Mass. 1 Frog and 1 Snake, from Sakbayeme, Cameroon; and 2 Lizards, from Mexico.
- MUSEUM OF ZOÖLOGY, Ann Arbor, Mich. (through Dr. A. G. Ruthven).
- Lizard, from Ensenada, Lower California; 62 amphibians and 164 reptiles.

PART EXCHANGE AND PART PURCHASE HERMANO NICEFORO MARIA, Medellin,

- Colombia.
 - 1 Cœcilian, 1 Salamander, 559 Frogs and Toads, 15 Tadpoles, 279 Lizards, and 20 Snakes, from Colombia.

By PURCHASE

- 3 Lizards, 24 Snakes, from Cuba and Colombia.
- 30 Frogs and 2 Tadpoles, 25 Sala-manders, 6 Lizards, and 4 Snakes, from Fukien Province, China.
- 46 Frogs, 19 Lizards, and 56 Snakes, from Ecuador.
- 3 Turtles, from Dodoma, Tanganyika Territory.
- 6 Snakes, from Espia, Bopi Basin, Bolivia.
- 45 Amphibians, from Washington.
- 117 Amphibians and reptiles, from South America.
- 44 Amphibians and reptiles, from Ceram.
- 141 Batrachians, 24 Lizards, 1 Croco-dile, and 47 Snakes, from Bolivia.
- Plaster cast of Matamata (turtle), original from Orinoco.
 - THROUGH MUSEUM EXPEDITIONS
- 57 Frogs and Toads, 16 Lizards, and 8 Snakes, from Ecuador. Collected by H. E. Anthony.
- 428 Amphibians, 122 Lizards, 37 Snakes, and 4 Turtles, from Eastern Tombs, Chili Province, China. Collected by Third Asiatic Expedition.
- 330 Lizards, from Polynesia. Col-lected by R. H. Beck.
- 2 Frogs, 1 Toad, 17 Lizards and Eggs, and 10 Snakes, from Siam and Collected Mariana Islands. bv Prof. H. E. Crampton.
- 9 Amphibians, 1 Lizard, and 6 Snakes, from Arizona. Collected by Dr. F. E. Lutz and J. A. G. Rehn. Tadpoles and 3 Frogs, from Hollis,
- L. I.; 61 Frogs, from Englewood, N. J., and 1 Salamander (5 larva), from Development from Douglaston, L. I. by G. K. Noble. Collected
- 6 Salamanders and 1 Frog, from Plainfield, N. J.; 5 Salamanders (larvæ), from Palisades, N. J.; 8 Greenwich, Salamanders, from Conn. Collected by G. K. Noble and Ruth Crosby Noble.
- 23 Salamanders, 1 Toad, and 2 Frogs,
- 25 Satamanders, 1 Toad, and 2 Frogs, from Plainfield, N. J. Collected by G. K. Noble and K. P. Schmidt.
 3 Salamanders and 3 Toads, from Nutley, N. J.; 9 Salamanders (7 larvæ), 15 Frogs and Toads, from Newton, N. J. Collected by G. K. Noble and G. H. H. Tate.

2,066 Amphibians and reptiles, from Mexico. Collected by P. D. R. Ruthling.

DEPARTMENT OF ORNITHOLOGY

By Gift

- DR. CLARA BARRUS, Roxbury, N. Y.
 - 3 Bird skins (Arctic Tern, Golden Plover, Golden-crowned Sparrow), from Alaska. Collected by John Burroughs.
- FREDERICK BLASCHKE, New York City. Albino Robin (*Planesticus migrato-rius*), from Cold Spring, N. Y. B. S. Bowdish, Demarest, N. J. 1 Parrot and 1 Goldfinch.
- COURTENAY BRANDRETH, Ossining, N. Y. Grebe (Colymbus auritus), flesh, from Ossining, N. Y. in the
- DR. LUCIUS C. BULKLEY, Riverdale, N. Y.
 - 41 Bird skins and 2 heads of Hornbill, from Siam.
- E. J. BURNS, New Brighton, S. I., N. Y. Owl, nestling (*Otus asio*), from New Brighton, S. I., N. Y. RUSSELL J. COLES, Danville, Va. Skin of Pigeon, from Prov. San Luis
- Potosi, Mexico. MORTIMER H. COOPER, Bridgehampton,
- N.Y.
- Indigo-bird (Passerina cyanea), in the flesh, from Bridgehampton.
- DEPARTMENT OF PARKS, New York City. Macaw.
- MISS BERTHA F. FENDT, New York City. Horned Owl, in the flesh, from Atlantic City, N. J. RALPH FRIEDMAN, Brooklyn, N. Y.
- Red-throated Loon, in the flesh, from Long Beach, L. I., N. Y.
- G. T. H. GILL, New York City.
- Black-crowned Night Heron, from Cold Spring Harbor, N. Y.
 A. L. HERRERA, Dept. of Agriculture, Mexico City, Mexico.
 Mexico Agriculture, Dept. Spind - 3 Mounted Birds and 5 Bird skins, from Mexico.
- GEORGE E. HIX, New York City.
- Sooty Shearwater, from Long Beach, N. Y.
- WALTER HUBBELL, New York City. Parrot, from India.
- MRS BERTHA MCREYNOLDS, New York City.
- Canary, in the flesh.
- MUSEO GOELDI, Pará, Brazil. 6 Bird skins.

- NEW YORK ZOÖLOGICAL SOCIETY. 1 Gallinule, 2 Parrots, 1 King Parrot, 1 Hornbill, 2 Meadowlarks, 1 Golden Pheasant, 1 Hybrid Pheasant, 1 Widgeon, 1 Teal, 8 Parakeets, 1 Hybrid Parakeet, 1 Grey Jumper, 1 Pitta, 1 Thrush, 2 Waxbills, 1 Coot, 1 Thickknee, 2 Finches, 5 Emu chicks, 1 Cereopsis Goose, 1 Starling, 1 Weaver, 2 Vultures, 1 Muscovy Duck, 1 Touraco, 1 young Goose, 1 Glossy Starling, 1 Cockatoo, 4 Lories, 1 Tanager, 1 Owl, 2 Herons, 1 Cuckoo, 1 Seedeater, 1 Toucan, 1 Roller, 1 Partridge, 1 Sarus Crane, 1 Coner, 1 Far-tridge, 1 Sarus Crane, 1 Crane, 1 Goose, 1 Chachalaca, 1 Magpie, 1 Tree Duck, 1 Pigeon, 1 Hemipode, 1 Kite, 1 Lapwing, 1 Bird-of-Para-dise, 1 Eagle.
- LORD WILLIAM PERCY, London, England.
 - Skin of Duck, from British East Africa, and skins of Long-tailed Jæger and of Seed-snipe.
- RAYMOND B. POTTER, New York City. 2 Sparrows and 1 Starling, from West Nyack, N. Y.
- DEPARTMENT OF PREPARATION (Transfer).

Body of a Bittern, from Nyack, N.Y.

- LORD ROTHSCHILD, Tring, Herts, England.
 - 22 Bird skins, from Lord Howe Island.
- LOUIS RUHE, New York City.
- 1 Finch and 1 Lark, in the flesh. GEORGE SCHMITT, New York City. Flicker, from Kingsbridge, New York City.
- L. SÖDERSTROM, Quito, Ecuador. 3 Skins of Doves, 3 of Owls, 1 of Barbet, 12 of Hummingbirds, and 1 of Wren.
- IRVING K. TAYLOR, New York City.
- Skin and skeleton of Shoe-bill Stork. NATIONAL GEOGRAPHIC-YALE UNIVERSITY
- EXPEDITION TO PERU.
 - 158 Birds, collected by Edmund Heller in the Urubamba Valley while on the National Geographic-Yale
- University Expedition to Peru. J. WILSON, London, England. 55 Bird skins, from Malay Peninsula and Straits Settlements.
- DWIGHT WINTER, Pittsburgh, Pa. Shell Parakeet, in the flesh, blue and white variety.

CHARLES WUNDER, New York City.

Whippoorwill, in the flesh, from Passaic Junction, N. J.

By Exchange

- BRITISH MUSEUM (NATURAL HISTORY), London, England.
- 85 Bird skins, from South America. W. F. H. ROSENBERG, London, England.
- 53 Bird skins. Tring. ZOÖLOGICAL MUSEUM, Herts. England.
 - 60 Bird skins, from South America. BY PURCHASE
 - 147 Mounted Birds, from Fukien Province, China. 8 Skins of Pelicans, from Porto Rico.

 - 27 Bird skins, from Natal, South Africa.
 - 1,868 Bird skins, from Peru.

THROUGH MUSEUM EXPEDITIONS

- WHITNEY SOUTH SEA EXPEDITION: Bird skins and skeletons, nests, eggs, herbarium specimens, notes, etc., from Polynesian Islands (1,547 Birds). Collected by R. H. Beck and É. H. Quayle.
 - 2,265 Bird skins, from Ecuador. Collected by George K. Cherrie.

DEPARTMENT OF MAMMALOGY By GIFT

- MRS. J. D. ADAMS, New York City. Pair of mounted Elk antlers, from Montana (?).
- MISS AIKEN, Fort Lee, N. J. Kinkajou, from Ecuador.
- B. C. BACHMANN, Frazee, Minn. Parascalops breweri (Mole), from Minnesota.
- C. S. BANKS, Manila, Philippine Islands.
- 9 Bats and 1 Shrew skull, from Manila.
- B. C. BECK, Seattle, Wash. Mountain Beaver skull (Aplodontia), from Seattle, Wash.
 E. T. BLUNDELL, Island Lake, Mani-
- toba.
- 8 Small Mammals, from Manitoba.
- COURTENAY BRANDRETH, Ossining, N.Y. 4 Shrews, 2 White-footed Mice, 1 Red-backed Mouse, from North Pond, N. Y.
- EDGAR B. BRONSON, JR., ELIZABETH VER-NON BRONSON, and GRACE VERNON BRONSON TWEEDY.
 - 43 Specimens, heads and horns, of African big game.

- Skins, skulls, and skeletons of Mam-mals and 1 pair of Rhinoceros horns, from Abyssinia and British Somaliland.
- DR. L. C. BULKLEY, Riverdale, N. Y. 28 Specimens of Mammals, from
- Siam. J. JIJON Y CAAMANO, Quito, Ecuador. Skin of Deer (Mazama), from Ecuador.
- George Agnew Chamberlain, New York City.
- Inyala, from Portuguese East Africa.
- CHARLES CHRISTMAN, New York City. Eastern Chipmunk, from Yonkers, N. Y.
- MRS. DEWITT D. COOK, New York City. Greater Kudu-skull and horns on panel.
- DEPARTMENT OF PARKS, New York City. 2 Cebus Monkeys, 1 Macacus Monkey, 2 Ocelots, 1 Mandrill, 1 Virginia White-tail Deer, 1 young Camel.
- DR. G. CLYDE FISHER, New York City. Black Rat (161/2" long), from Douglaston, L. I.
- FRANCIS D. K. FLINT, Cedarhurst, L. I., N. Y.
 - Black Woodchuck.
- GEORGE G. GOODWIN, New York City. 1 Sorex araneus, 2 Evotomys glareo-lus, from "Marchington Woodlands," England.
- WALTER GRANGER, New York City. Bat (Vespertilio fuscus).
- MISS ETHEL GROVE, Hasbrouck Heights, N. J.
 - Persian Cat.
- BRAZIER HOWELL, Pasadena, Cal.
- 17 Small Mammal skins and skulls. W. HUDSON, New York City.
- Deer, from Ecuador.
- PROFESSOR GEORGE S. HUNTINGTON, New York City. Wombat skeleton, from Australia.
- M. B. HUSTON, Bluefields, Nicaragua. 3 Tapir skins, from Nicaragua.
- ERNEST INGERSOLL, New York City. Sciuropterus (Flying Squirrel), from Alberta.
- CHARLES LEONARD, New Rochelle, N. Y. Gray Squirrel, from New Rochelle.
- DR. C. C. LITTLE, Cold Spring Harbor, L. I., N. Y.
 - Dachshund, from Long Island, N.Y.

- DEPARTMENT OF LOWER INVERTEBRATES (Transfer).
 - 3 Mice, from Tobo, Chile.
- S. MCCARTHY, New York City. Persian Cat.
- W. DEW. MILLER, New York City. Brown Rat.
- NEW YORK ZOÖLOGICAL SOCIETY, NEW York City.
 - 2 Agoutis, Anoa, Giant Anteater, 2 Great Anteaters, Addax Antelope, Armadillo, 2 Bandicoots, Black Bear, Grizzly Bear, Syrian Bear, Blesbok (and 1 embryo), Capybara, Eyra, Coati, Spotted Dasyure, Deer, Sambar Deer, Fox, Fennec, Rocky Mountain Goat, Grison, Ibex, Jackal, Kinkajou, 2 Lemurs, Lynx, Mandrill, 2 Marmosets, Meerkat, Mongoose, 3 Monkeys, Entellus Cercopithecus Monkey, Monkey, Diana Monkey, 2 Macacus Monkeys, Squirrel Monkey, Feather-tail Mouse, Opossum, 1 Virginia Opos-Mouse, Opossum, 1 Virginia Opos-sum, Otter, Phalanger, 5 Flying Phalangers, 5 Vulpine Phalangers, Canadian Porcupine, Sheep, Big Horn Sheep, Skunk, Squirrel, Fly-ing Squirrel, Fox Squirrel, Prevost Squirrel, 2 Thars, 2 Tigers, 2 Wal-labies, 5 Wolf cubs, 2 Wombats, Woodchuck Woodchuck.
- RINGLING BROTHERS, Barnum and Bailey Circus. Gorilla, "John Daniel."
- MRS. NATE SALSBURY, New York City. 1 Buffalo head, 1 Deer head, 1 pair Steer horns, 1 Rocky Mountain Sheep head, 1 Armadillo.
- MR. SEBILLA, New York City. Armadillo.
- LUDOVIC SÖDERSTROM, Quito, Ecuador. 60 Specimens of Mammals, from Ecuador, including 1 specimen of Dinomys and a series of the rare fish-eating rat, Ichthyomys.
- C. ROY STROTZ, New York City. Skin of Giant Anteater, from Paraguay.
- G. H. H. TATE, Nutley, N. J.
- 2 White-footed Mice, from Nutley, N. J.
- HAROLD H. WILCOX, New York City. Opossum.
- MRS. HAROLD WILCOX, New York City. Opossum, from South America.

BARNUM BROWN.

By Exchange

BROOKLYN MUSEUM, Brooklyn, N. Y. Skull of Peruvian Otter. CHARLES SNYDER, New York City.

- - 5 Bats in alcohol, Scarsdale, N. Y. BY PURCHASE

 32 Mammals, from British Guiana.
 8 Artiodactyla, 18 Carnivora, 86 Ro-dentia, 68 Chiroptera, 5 Insectivora, 4 Pholidota, from Yenping, Fukien Province, China.2 African Elephants, and 4 Inyala.

THROUGH MUSEUM EXPEDITIONS

About 1,500 Mammals, from Ecuador. Collected by H. E. Anthony.

WHITNEY SOUTH SEA EXPEDITION:

- 15 Bats in alcohol and 4 Rodents (Mus), from South Sea Islands. Collected by R. H. Beck. 14 Skulls of Macrorhinus leoninus and 2 of Ogmorhinus lepionyx, from
- Bay of Isles, South Georgia. Col-lected by Dr. R. C. Murphy.

DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

BY GIFT

BARNUM BROWN.

Collections of fossils and natural history specimens, from Abyssinia.

PROFESSOR G. DE LAPOUGE, Université, Poitiers, France (through Professor Osborn).

Cast of fossil primate tooth.

- **PROFESSOR CHARLES DEPERET, University** of Lyons, France (through Pro
 - fessor Osborn). Cast of molar tooth of Mastodon *þygmæus* Algeria. (type), original from

GEORGE D. DOUGHTY, Post, Texas. Teeth and other parts of Triassic reptiles and invertebrate fossils, and type skull of Triassic fossil reptile, Phytosaurus doughtyi, from Dockum formation, Post City, Tex.

LIEUT. COL. CHARLES WELLINGTON FUR-LONG, Boston, Mass.

- Sample of hair, probably of Neomy-lodon (extinct Ground Sloth), from the cave at Ultima Esperanza Inlet, Chile.
- NEW YORK TIMES WIDE WORLD PHOTOS (through Mr. De Mar).

8 Photographs of horses in action.

- G. B. SHATTUCK, Poughkeepsie, N. Y. (through Dr. E. O. Hovey).
 - 3 Antelope teeth (sub-fossil) from Lake Albert Nyanza.
- C. C. STILLMAN. New York City.
- Cleaned skeleton of a Morgan horse. YALE UNIVERSITY AND SOUTHERN METH-
 - ODIST UNIVERSITY (through Professor R. S. Lull). Cast of type of fossil antelope, Tet-
 - rameryx, from Dallas, Tex.

BY EXCHANGE

PROFESSOR CLAUDE GAILLARD, Lyon. France.

Cast of Ursavus primævus, a primitive fossil bear.

- SAMUEL HENSHAW, Cambridge, Mass. Casts of type specimens of fossil vertebrates in the J. D. Whitney Col-lection, and of fossil Ostrich egg, from China. MAJOR E. HUE, Chartres, France. Casts of 2 skulls of fossil man.

- UNITED STATES NATIONAL MUSEUM, Washington, D. C.
- Casts of types of fossil birds (9 specimens).
- ZOÖLOGICAL MUSEUM, UNIVERSITY OF CAMBRIDGE, England (through C. Forster Cooper).
 - Skull and jaws of Bos primigenius and back of skull of Bison priscus, from Pleistocene of Cambridge.

BY PURCHASE

- 7 Casts: Homo neanderthalensis. La Chapelle-aux-Saints, skull and jaw; H. neanderthalensis, skull cap; H. sapiens, neanderthaloides, skull cap; Cro-Magnon cranium; brain cast.
- Collection of about 20 casts of fossil vertebrates in the Stuttgart Museum.
- Plaster cast of skulls and skeleton bones of fossil man (2 individuals).
- Skull and part of skeleton of Mammoth, from Rochester, Ind.

THROUGH MUSEUM EXPEDITIONS

- Small collection of Pleistocene Mammals (Horse, Ground Sloth, etc.), from Punin, Ecuador. Collected Collected by H. E. Anthony
- 2 Fossils from the Pliocene of Samos, Greece. Collected by Barnum Brown.
- Fossil Mammal specimens, from Snake Creek, Sioux Co., Neb. Collected by Albert Thomson.

DEPARTMENT OF COMPARATIVE) ANATOMY

By GIFT

NEW YORK ZOÖLOGICAL SOCIETY, NEW lork City.

3 Virginia Opossums.

DEPARTMENT OF ANTHRO-POLOGY

By GIFT

- HON. RECAREDO AMENGUAL N., Intendente de Tarapacá, Chile.
- Ethnological collection: mummies, pottery, blankets, musical instru-ments, etc., from Pica, Chile. Dr. R. W. Ампол, Chaumont, N. Y.
- Cranial bones, from Point Peninsula, N. Y.
- BENJAMIN WALWORTH ARNOLD, Albany, N. Y.
 - Prehistoric terra cotta reproduction -perhaps a deer's foot, from Tepisclan, Mexico.
- MR. AND MRS. WILLIAM M. BALDWIN, New York City.
 - Feather headdress, skin apron, woven belt, neck-scarf feathers, and 3 feather ornaments, from tribe living in western Paraguay.
- Bernice PAUAHI BISHOP MUSEUM, Honolulu, H. I.
 - Large plaster figure, busts, and skeletal material.
- NELSON BLOUNT.
- 2 Obsidian arrowheads, from Litchfield Co., Conn.
- PROFESSOR FRANZ BOAS, New York City. Pottery vessel, from New Mexico. THE LATE DR. E. A. BOGUE, (through Miss Holmes, New York City).
 - Casts of jaws and teeth of 1,100 white persons; also collection of lantern slides made from same.
- L'ABBE BREUIL, Paris, France. 2 Paleolithic flint implements and 1 horn of Saiga antelope, from Placard Cave, Charente, France.

BARNUM BROWN.

Miscellaneous archæological material: vessels (Roman); 5 lamps (Ro-man); fragments of vessel of Gallic type; fragments of limestone, carved and painted; fragments of vessel (Turkish origin); fragments of mummy cloth and painted mummy cover; from Egypt.

- M. BUNNY, New Rochelle, N. Y.
- Tapa cloth, from South Sea Islands. J. JIJON Y CAAMANO, Quito, Ecuador. 2 pieces of Ecuador cotton: 1 specimen from Santa Rosa, Province of El Oro; 1 specimen from Portovelo, near Zaruma, Province of El Oro, altitude 2,200 feet.
- Тне LATE HENRY A. CASSEBEER (through Remsen Williams), Long Island City, N. Y.
 - 57 Ethnological specimens, from Africa, Mexico, Philippine Islands, South America, New Mexico, South America, New China, Japan, South Seas, Norway,
- W. E. CHAPMAN, Sinaloa, Mexico.
 - 5 Pictures of Mexican petroglyphs.
- FREDERICK H. CHASE, New York City. Skin canoe, child's ivory top, ivory mallet, ivory and whalebone knife, 1 pair of baby mucklucks, 2 walrus teeth, 2 ivory pointed arrows, 1 ivory buck-saw, 1 pair miniature snow-shoes, from Nome; beaded poke or gold sack, from Koyokuk River; scabbard for hunting-knife, beaded stand-cover, Tanana River; rifle case, from Ketchumstock; large poke or gold sack, from Fort Vukon Alaska Yukon, Alaska.
- H. R. H. CHOW CHOM ERP, Bangkok, Siam. (Through Dr. L. C. Bulkley.) Silver embroidered sash worn by Siamese nobility at royal Ceremonies.
- ALEXANDER C. COLDRUP, New York City. Wooden image, from Senegal, West Africa.
- W. P. COSTELLO, Camaguey, Cuba.
- 9 Pebbles and 2 strings of beads called witch medicine, and used by the Negroes, from Cuba.
- Dr. HENRY E. CRAMPTON, New York City.
 - 14 Pieces of batik cloth showing the different stages in the process of making, from the Island of Java.
- THE LATE CAPTAIN FRANK P. CROCKETT (through Miss Esther M. Crockett, Brooklyn, N. Y.).
 - Ethnological specimens consisting of shields, musical instruments, costumes, girdles, etc., from Africa.
- F. B. CROWNINSHIELD, Boston, Mass. 3 Indian skulls and 3 potsherds, from Florida.

- MRS. E. H. DANFORTH, Cranford, N. J. Ethnological collection: 4 Navaio blankets, buffalo robe, 1 bundle arrows, pair of long moccasins, rawhide quirt, pipe and stem, pipe bag, wooden dipper, beaded belt, bearclaw headdress, bone skin scraper, 2 blue bead bracelets, knife sheath, and beaded ornament; from Navajo, Ute, and Sioux.
- MISS FRANCES DENSMORE, Washington, D. C.
 - 10 Varieties of food from the Papago Indians.
- CAPT. T. E. DONNE, London, W. C. 2, England.
 - 14 Stereoscopic pictures of fractured human bones, photographed in the New Zealand Hospital, Walton-on-Thames, during the War.
- Dr. Jonathan Dwight, New York City.

Basket, oblong in shape with decora-tion in red, from Lillooet Indians.

MISS ISABEL ROGERS EDGAR. New York Citv.

Ethnological collection from Labrador.

- FRED H. ELLIS, Marfa, Tex.
- Arrowpoint, from aviation field near Marfa.
- LIEUT. GEORGE T. EMMONS, U. S. N., Princeton, N. J.

Child's winter shoes made of skin, from Chilkat Indians.

- B. ERICHSON, New York City.
- 2 Tally sticks, from Baltic States.
- JACQUES ESTANOVE, Mas Grenier, Tarn et Garonne, France.
 - Stone implements of Neolithic type, from France.
- MRS. P. E. FARNUM, New York City. Beaded belt of the Zulu, South Africa.
- DR. SAMUEL W. FERNBERGER, Philadelphia, Pa.
 - Archæological collection: 2 gauges, 2 chisels, 2 parts of bayonet heads, 3 partly finished arrowheads, 1 small spearhead, 1 broken spearhead, 1 Kineo flint matrix, 1 Kineo flint chip, 1 knife (?), 1 bottle-shaped stone, 1 drilled stone, 1 small scraper, 1 small clay pipe bowl, 1 scraper; from Grand Lake, Me.
- ALAQUAH FLOOD, New York City. Bow-gun and oil painting from the
 - Eskimo.

- V. FORBIN, Clamart, France.
- 170 Chipped flint implements, France. A. I. FRYE, New Orleans, La.
- Skull, from clay deposit under city of New Orleans, La.
- DEPARTMENT OF GEOLOGY (Transfer). 1 Sacrum and 1 vertebra, from cave in Arkansas.
- DR. P. E. GODDARD, New York City.
- 2 Cloth belts, from Huancayo, Peru.
- DR. GODIG, Cerra de Hojas, Ecuador. Stone head, from Manta, Ecuador.
- MISS SARAH GOLDBERG, New York City. Pottery vessel, from Southwestern United States.
- THE LATE LAWRENCE PRESTON GOLD-STONE (through Mrs. Robert Hastings, Kew Gardens, N. Y.).
- Ethnological specimens: 1 bull-roarer, 1 shield, 2 boomerangs, spear thrower and club, from Australia; 2 small crescent axes and 1 quirt, from Mexico; 2 flintlock pistols, 1 dagger, 1 fly switch (horse-hair), large sword and scabbard (gold in-lay), set of 3 throwing darts in case; from Australia, the Orient, and Mexico.
- MRS. J. T. GORTON, YONKERS, N. Y.
- Adze for making canoes, knife for dressing skins, knife for salmon, spindle whorl, spearpoint, stone objects (some fragmentary), wooden soup spoon, carved antler, from Chinook Indians, Orcas Is., Washington; and arrowpoint, from Vinland, Wisconsin.
- FRANK C. GRIFFITH, New York City. Lithographic print of a Maya sculpture.
- GUGGENHEIM BROTHERS, New York City. Mummy of a prehistoric miner, from Chuquicamata, Chile.
- CLARENCE W. HAHN, New York City. 7 Dozen lantern slide plates.
- H. F. HARDING, Wenatchee, Wash. 24 Pieces of flint and 5 pieces charred cloth and basket weave, from Washington.
- HON. FRITS HOLM, New York City. Leather box made especially to hold the official winter or summer headgear of a mandarin, from Sian-fu, China.
- Dr. George Horne, Melbourne, Australia. Chipped implements of Azilian-Tardenaidian type, from Australia.

MISS ELEANOR D. JOHNSON, New York City.

Basket, from Africa.

- DR. MORTON S. KAHN, New York City. 13 flint implements, from Georgia.
- COL. A. N. KAZNAKOFF, New York City.
- Silver plaque, from Bangkok, Siam. MISS HELEN CULVER KERR. New York
- City.
 - Native musical instrument (9 pieces), from Java.
- DR. IRA A. KIP, JR., New York City.
 - Fiji hand-throwing club, Fiji wooden pillow, carved head, wooden staff, bone necklace, carved wooden figure, shark-tooth sword, boomerang, 4 shell bracelets, leather shadow pantomime piece (fan?), from South Seas.
- ANTONIO LUJAN AND JUAN MARCOS, Taos, N. M.
 - 5 Phonograph records.
- WILLIAM MCADOO, New York City.
 - Scalplock, obtained from a North Dakota Indian at the St. Louis Exposition.
- MRS. PAYSON MERRILL, New Canaan, Conn.
 - Indian war club, from Plains Indians, 2 baskets and 1 oil dish from Northwest Coast, 3 baskets from California, and 3 pottery vessels from Southwest.
- ROBERT B. MEYER, Greatneck, L. I., N. Y.
 - Potsherds, from Malta.
- J. REID MOIR, Ipswich, England. Flint artifacts from Pliocene and Glacial gravels of Eastern England.
- P. J. MOSENTHAL, New York City.
 - 2 Prehistoric pottery vessels, 1 mod-ern pottery vessel, and 1 pottery figure (?); from Mesa Verde and Hopi.
- H. OBERMAIER, Madrid, Spain.
- Flint and bone implements, also sea shells and fragmentary animal bones from two caves in northern Spain.
- H. W. OTT, New York City.
 - Sword and Mexican sombrero, from Mexico City; flint gun from Transvaal; pair snowshoes from Montreal: pair boots from Alaska; musical instrument from San Francisco's Chinatown; pair moccasins.

- Mrs. Elsie Clews Parsons, Harrison, N. Y.
- 39 Feathersticks from New Mexico.
- DR. T. MITCHELL PRUDDEN, New York City.
 - Wooden mask, wooden fishhook, carved rib, from Sitka, Alaska; beaded sheath with knife, from Sioux or Ute; beaded bag from Plains Indians.
- FRANK J. RAGETTE, Bryn Mawr Park, N. Y.
 - Knife, bolo club, wearing apparel, bow and several arrows, from Samoa
- PROFESSOR NICHOLAS ROERICH, New York City.
 - 6 Arrowpoints, from Novorod Dis-trict, Lake Piros, Russia.
- THE LATE JACOB S. SCHLUSSEL (through Mrs. Lottie Schussel, New York City).
 - Drum, war club, beaded knife case, beaded needle case, pair leggings, beaded bag, large porcupine quill decorated skin bag, parfleche bag, from Plains and Eastern Woodland Indians.
- REMINGTON SCHUYLER, New Rochelle, N. Y.
 - 4 Indian arrowpoints, from Hunter's
- Island, N. Y. Dr. FRANK G. SPECK, Philadelphia, Pa. Bone fragments of raccoon, Virginia deer, fish vertebra, clam shells, flint chips, and pottery, from Annisquam ruin, Gloucester, Mass.; pottery saucer, from Lake Titicaca, Peru. MRS. S. B. P. TROWBRIDGE, New York
- City.
- Bow, arrows, and quiver, from Mexico.
- JULIAN WARNER, New York City.
- Skull in 2 pieces, from Indian mound in Moundsville, W. Va.
- HAZZLEDINE WARREN, Sherwood, S. Loughton, Essex, England. 23 Flaked stone implements,
 - from Graig-lwyd, Penmæmawr, Wales.
- C. W. WASHBURNE, New York City.
- 22 Ethnological specimens; 3 carved war clubs, 2 axes, pipe made of horn with pottery bowl and decorated with beads, wooden mask, pair carved wooden tongs, beaded necklace, brass bracelet, pipe bowl (pottery), 8 carved figures (fe-tiches), 2 small figures on one stand; from Africa.

- JOHN WETHERELL, Kayenta, Ariz.
- Corrugated pottery vessel, from Kayenta.
- HERMAN DE WETTER, New Rochelle, N. Y.
 - Knitted work consisting of 2 pair colored mittens, 1 pair colored stockings, and 2 long narrow strips, from an island in the Baltic.
- REMSEN T. WILLIAMS, Long Island City, N. Y.

Ethnological specimens from Africa.

By Exchange

- CLEVELAND MUSEUM OF ART, Cleveland, O. (through Frederic Allen Whiting).
- 61 Specimens of Pottery, from Colombia, S. A. Lieut. Col. Federico Diez de Medina,
- New York City.
- 1 Piece of modern cloth from Copacabana, 1 piece of gold (rectangu-lar), 1 small gold vessel (?), 2 pieces gold (?), from Tiahuanaco, and 3 cards of arrowpoints; from Bolivia.
- LIEUT. G. T. EMMONS, U. S. N., Princeton, N. J.
 - Round basket with cover, from Africa; long birch-bark basket with cover, small basket with cover, British Columbia; 6 Fiji war clubs and fibre belt, Pacific Islands.
- ALAQUAH FLOOD, New York City.
- 2 Small Bayeta blankets, 1 Navajo blanket.
- GEORGE LANGFORD, Joliet, Ill. Archæological material, from Des Plaines River region, Ill. DE Cost SMITH, Amenia, N. Y. Large basket with conventional fig-
- ures of deer around the edge.
- ZOÖLOGICAL AND ANTHROPOLOGICAL-ETH-NOLOGICAL MUSEUM, Dresden, Germany.
 - Ethnological collection, from northern Russia.

By PURCHASE

5 Pieces of Batik, from Java.

- John canoe, horsehead, 1 pair zapata, 1 flute, large gourd botle, 3 gourd cups, head pad, 2 palm-leaf brooms, 2 twisted twig beaters, 2 drums; from Jamaica, B. W. I.
- About 98 ethnological specimens, from Siam.
- 78 Casts of Paleolithic art objects, from France.

7 Pieces of Peruvian textiles.

- Beaded band, from Chippewa.
- 2 Blankets, from Navajo.
- 12 Peruvian gold objects.
- Human head in gold, from Las Palmas, Panama.
- 12 Strings of beads (seeds), Poi bowl (large) and 9 small ones, 1 piece of tapa cloth, and collection of photographs, from Hawaii.
- 21 Specimens of Borneo brass.
- Cast of cranium of microcephalic idiot, and cast of skull of female of Nagai Pygmy group of New Britain, Melanesia.
- Carved wooden paddle, from Cook Island.
- Copper club-head and 6 pieces of cloth, from Cuzco and Ica, Peru.
- Gold headband, from Tiahuanaco, Bolivia.
- Rain hat, from Choco Indians, Cauca River, Colombia.
- Potsherds and chipped implements and a written report on the excavation, from Co., N. Y. Sloatsburg, Rockland
- 9 Gold objects; 5 plates, collar, breast piece, ear plug, and animal rattle, from Panama.
- Archæological collection: 53 broken chisels, gouges, etc., 98 chipped implements, 5 slate bayonet fragments, small collection of bone implements and pottery, from Lower St. Lawrence River region, Canada.

THROUGH MUSEUM EXPEDITIONS

- Ethnological collection, from Abys-sinia and Somaliland. Collected by Barnum Brown.
- Pottery from Arizona and Ute skeleton from La Plata Co., Col. Collected by Charles L. Bernheimer and Earl H. Morris.
- Spindle with thread, piece of cloth (part of mummy bundle), and potsherd, from Huarmey, Peru. Collected by P. E. Goddard.
- Archæological material from Aztec, N. M., and pottery from Navajo Reservation. Collected by Earl H. Morris.
- Archæological specimens consisting of: 22 chipped points, 6 notched sinkers, workshop chips, and fragments of pottery; from White Haven, Pa. Collected by N. C. Nelson and Max Schrabisch.

Dog travois, 2 earth lodge frames, Hunter's lodge frame, flat roof model, example of Indian pipe; from Fort Berthold Indian Reservation. North Dakota.

DEPARTMENT) OF PUBLIC HEALTH

By GIFT

Army Medical School, Washington, D. C.

3 Bacterial cultures.

DR. CARLOS CHAGAS, Brazil.

Series of 8 specimens illustrating development of disease carrying by Triatoma megista, from Brazil.

HINKELMANN LABORATORIES, Oklahoma City, Okla. Bacterial specimen.

- M. C. KAHN, Cornell Medical School, New York City. Bacterial specimen.
- DR. CARL O. LATHROP, Buffalo, N. Y. 4 Bacterial specimens.
- DR. S. A. WAKSMAN, New Brunswick, N. J.

12 Bacterial specimens.

MISCELLANEOUS

By GIFT

R. B. DODSON, New York City.

2 Glass dome cases of birds, about 25 shells, and about 40 marble fruits.

BY EXCHANGE

A. L. HERRERA, Department of Agricul-

ture, Mexico City, Mexico. Miscellaneous lot of material: 8 birds, 2 fishes (Diodon and Tetrodon), a few plants and several books.

ART

By GIFT

- MRS. C. F. HOLDER, Pasadena, Cal. Study of head of Puma, by George
- Butler. VERY REV. CHRYSOSTOM SCHREINER, Nassau. Bahamas.

Gilt bronze medallion of Columbus.

WISCONSIN ACADEMY OF SCIENCES, ARTS,

- AND LETTERS, Madison, Wis. Semi-centennial medallion of the Wisconsin Academy of Sciences, Arts, and Letters.
- DEPARTMENT OF PREPARATION. Death-mask of Dr. J. A. Allen.

BY PURCHASE

Bronze statuette, "The Athlete," by Dr. R. Tait McKenzie.

INCORPORATION

AN ACT TO INCORPORATE THE

AMERICAN MUSEUM OF NATURAL HISTORY Passed April 6, 1869

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. John David Wolfe, Robert Colgate, Benjamin H. Field, Robert L. Stuart, Adrian Iselin, Benjamin B. Sherman, William A. Haines, Theodore Roosevelt, Howard Potter, William T. Blodgett, Morris K. Jesup, D. Jackson Steward, J. Pierpont Morgan, A. G. P. Dodge, Chas. A. Dana, Joseph H. Choate and Henry Parish, and such persons as may hereafter become members of the Corporation hereby created, are hereby created a body corporate, by the name of "The American Museum of Natural History," to be located in the City of New York, for the purpose of establishing and maintaining in said city a Museum and Library of Natural History; of encouraging and developing the study of Natural Science; of advancing the general knowledge of kindred subjects, and to that end of furnishing popular instruction.*

SEC. 2. Said Corporation shall have power to make and adopt a Constitution and By-Laws, and to make rules and regulations for the admission, suspension and expulsion of its members, and their government, the number and election of its officers, and to define their duties, and for the safe keeping of its property, and, from time to time, to alter and modify such Constitution, By-Laws, Rules and Regulations. Until an election shall be held pursuant to such Constitution and By-Laws, the persons named in the first section of this Act shall be, and are hereby declared to be, the Trustees and Managers of said Corporation and its property.

Incorporation

SEC. 3. Said Corporation may take and hold by gift, devise, bequest, purchase or lease, either absolutely or in trust, for any purpose comprised in the objects of the Corporation, any real or personal estate, necessary or proper for the purposes of its incorporation. †

SEC. 4. Said Corporation shall possess the general powers, and be subject to the restrictions and liabilities, prescribed in the Third Title of the Eighteenth Chapter of the First Part of the Revised Statutes, and shall be and be classed as an educational corporation.*

SEC. 5. This Act shall take effect immediately.

STATE OF NEW YORK, OFFICE OF THE SECRETARY OF STATE. \$s.:

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom, and of the whole of said original law.

[L. S.] Given under my hand and seal of Office at the City of Albany this fourteenth day of April, in the year one thousand eight hundred and sixty-nine.

D. WILLERS, JR., Deputy Secretary of State.

† Section 3. As amended by Chapter 303, Laws of 1898, of the State of New York, entitled "An Act to amend chapter one hundred and nineteen, laws of eighteen hundred and sixty-nine, entitled 'An Act to incorporate the American Museum of Natural History,' relative to its charter."

* Sections 1 and 4. As amended by Chapter 162 of the Laws of 1909, entitled "An Act to amend chapter one hundred and nineteen of the laws of eighteen hundred and sixty-nine, entitled 'An Act to incorporate the American Museum of Natural History,' in relation to classifying said corporation and modifying its corporate purposes."

CONTRACT

WITH THE DEPARTMENT OF PUBLIC PARKS FOR THE OCCUPATION OF THE NEW BUILDING

THIS AGREEMENT, made and concluded on the twenty-second day of December, in the year one thousand eight hundred and seventy-seven, between the DEPARTMENT OF PUBLIC PARKS OF THE CITY OF NEW YORK, the party of the first part, and the AMERICAN MUSEUM OF NATURAL HISTORY, party of the second part, witnesseth:

Whereas, by an Act of the Legislature of the State of New York, passed April 22d, 1876, entitled "An Act in relation to the powers and duties of the Board of Commissioners of the Department of Public Parks, in connection with the American Museum of Natural History, and the Metropolitan Museum of Art," the said party of the first part is authorized and directed to enter into a contract with the said party of the second part, for the occupation by it of the buildings erected or to be erected on that portion of the Central Park in the City of New York, known as Manhattan Square, and for transferring thereto and establishing and maintaining therein its museum, library and collections, and carrying out the objects and purposes of said party of the second part; and,

Whereas, a building contemplated by said act has now been erected and nearly completed and equipped in a manner suitable for the purposes of said Museum, as provided in the first section of the Act of May 15, 1875, known as Chapter 351, of the Laws of 1875, for the purpose of establishing and maintaining therein the said Museum, as provided by the said last named act, and by the Act of April 5, 1871, known as Chapter 290, of the Laws of 1871; and,

Whereas, it is desired as well by the said party of the first part, as by the said party of the second part, that, immediately upon the completion and equipment of said building, the said

party of the second part should be established therein, and should transfer thereto its museum, library and collections, and carry out the objects and purposes of the said party of the second part;

Now, therefore, it is agreed by and between the said parties as follows, namely:

First.—That the said party of the first part has granted and demised and let, and doth, by these presents, grant, demise and let, unto the said party of the second part, the said buildings and the appurtenances thereunto belonging, to have and to hold the same so long as the said party of the second part shall continue to carry out the objects and purposes defined in its charter; or such other objects and purposes as by any future amendment of said charter may be authorized; and shall faithfully keep, perform, and observe the covenants and conditions herein contained on its part to be kept, performed and observed, or until the said building shall be surrendered by the said party of the second part, as hereinafter provided.

Secondly.—That neither the party of the first part, its successor or successors, nor the Mayor, Aldermen and Commonalty of the City of New York, shall be in any manner chargeable or liable for the preservation of the said building or the property of the party of the second part which may be placed therein, against fire, or for any damage or injury that may be caused by fire to the said property; but it is agreed that, damages as aforesaid excepted, the said party of the first part will keep said building, from time to time, in repair.

Thirdly.—That as soon after the completion and equipment of said building as practicable, said party of the second part shall transfer to, and place and arrange in said building, its museum, library and collections, or such portion thereof as can be properly displayed to the public therein, and shall have and enjoy the exclusive use of the whole of said building, subject to the provisions herein contained, and the rules and regulations herein prescribed, during the continuance of the term granted, or until a surrender thereof, as herein provided.

Fourthly.—That the exhibition halls of said building shall, on Wednesday, Thursday, Friday and Saturday of each week, and on all legal or public holidays, except Sunday, be kept open

and accessible to the public, free of charge, from nine o'clock A. M. until half an hour before sunset, under such rules and regulations as the party of the second part shall from time to time prescribe; but on the remaining days of the week the same shall be only open for exhibition to such persons, upon such terms as the said party of the second part shall from time to time direct. But all professors and teachers of the public schools of the City of New York, or other institutions of learning in said city, in which instruction is given free of charge, shall be admitted to all the advantages afforded by the said party of the second part, through its museum, library, apparatus, and collections, or otherwise, for study, research and investigation, free of any charge therefor, and to the same extent and on the same terms and conditions as any other persons are admitted to such advantages, as aforesaid.

Fifthly.—That the museum, library and collections, and all other property of said party of the second part, which shall or may be placed in said building, shall continue to be and remain absolutely the property of said party of the second part, and neither the said party of the first part nor the said the Mayor, Aldermen and Commonalty, shall by reason of said property being placed in said building, or continuing therein, have any right, title, property or interest therein; nor shall the said party of the second part, by reason of its occupation and use of said building under this agreement, acquire, or be deemed to have any right, title, property or interest in said building, except so far as expressly granted by this agreement.

Sixthly.—That the said party of the second part shall, on or before the first day of May, in every year, during the continuance of this agreement, submit to the said party of the first part, its successor or successors, a detailed printed report of the operations and transactions of the said party of the second part, and all its receipts and payments, for the year ending with the 31st day of December next preceding.

Seventhly.—That said party of the first part shall have, at all times, access to every part of the said building for general visitation and supervision, and also for the purpose of the performance of the duties devolved upon it by the laws of the State of New York, or of the City of New York. That the police powers and

supervision of said party of the first part shall extend in, through and about said building. That the said party of the second part may appoint, direct, control and remove all persons employed within said building, and in and about the care of said building, and the museum, library and collections therein contained.

Eighthly.—That said party of the second part may, at any time, after the expiration of three, and before the expiration of six, months from the date of the service of a notice in writing to said party of the first part, its successor or successors, or to the Mayor of the City of New York, of its intention so to do, quit and surrender the said premises and remove all its property therefrom; and upon and after such notice, the said party of the second part shall and will, at the expiration of the said six months. quietly and peaceably yield up and surrender unto the said party of the first part and its successors all and singular the aforesaid demised premises. And it is expressly understood and agreed by and between the parties hereto that if the said party of the second part shall omit to do, perform, fulfill or keep any or either of the covenants, articles, clauses and agreements, matters and things herein contained, which on its part are to be done, performed, fulfilled or kept, according to the true intent and meaning of these presents, then and from thenceforth this grant and demise shall be utterly null and void. And in such case it shall and may be lawful for said Department to serve or cause to be served on the said party of the second part a notice in writing declaring that the said grant hereinbefore made has become utterly null and void and thereupon the said party of the first part, its successor or successors (ninety days' time being first given to the said party of the second part to remove its property therefrom), may reënter, and shall again have, repossess and enjoy the premises aforementioned, the same as in their first and former estate, and in like manner as though these presents had never been made, without let or hindrance of the said party of the second part, anything here contained to the contrary notwithstanding.

Ninthly.—And it is further expressly understood and agreed, by and between the parties hereto, that this agreement may be wholly canceled and annulled, or, from time to time, altered, or modified, as may be agreed, in writing, between the said par-

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ties, or their successors, anything herein contained to the contrary in any wise notwithstanding.

In witness whereof, the party of the first part hath caused this agreement to be executed by their President and Secretary, pursuant to a resolution of the Board of Commissioners of said Department, adopted at a meeting held on the thirtieth day of January, in the year of our Lord one thousand eight hundred and seventy-eight; and the said party of the second part hath caused the same to be executed by their President, and their official seal affixed thereto, pursuant to a resolution of the Trustees of the American Museum of Natural History, adopted at a meeting held on the twelfth day of February, in the year of our Lord one thousand eight hundred and seventy-seven.

In presence of D. Porter Lord.	JAMES F. WENMAN, President Department of Public Parks of the City of New York.
SEAL of the American Museum of Natural History	WILLIAM IRWIN, Secretary Department of Public Parks of the City of New York.
	ROBERT L. STUART, President American Museum of Natural History.
STATE OF NEW YORK City and County of New On this 12th day of Fel	York, ss.: York, in the year 1878, before me personally

On this 12th day of February, in the year 10/0, before me personally came James F. Wenman, President of the Department of Public Parks of the City of New York, and William Irwin, Secretary of the said De-partment of Public Parks, with both of whom I am personally acquainted, and both of whom being by me duly sworn, said that they reside in the City and County of New York; that the said James F. Wenman is the President, and the said William Irwin is the Secretary of the said Department of Public Parks, and that they signed their names to the foregoing agreement by order of the Board of Commis-sioners of the said Department of Public Parks, as such President and Secretary.

W. C. BESSON, (73) Notary Public N. Y. Co.

[SEAL.]

STATE OF NEW YORK } City and County of New York, \$ ss.: On this 12th day of February, in the year 1878, before me personally came Robert L. Stuart, the President of the American Museum of Natural History, with whom I am personally acquainted, who being by me duly sworn, said that he resides in the City and County of New York, that he is the President of the American Museum of Natural History and that he knows the corporate seal of said museum that the History, and that he knows the corporate seal of said museum, that the seal affixed to the foregoing agreement is such corporate seal, that it is

affixed thereto by order of the Board of Trustees of said American Museum of Natural History, and that he signed his name thereto by the like order, as President of said Museum.

[SEAL.]

W. C. BESSON, (73) Notary Public N. Y. Co.

Recorded in the office of the Register of the City and County of New York in Liber 1426 of Cons., page 402, February 16, A. D. 1878, at 9 o'clock A. M., and examined. Witness my hand and official seal,

FREDERICK W. LOEW.

[SEAL.]

Register.

Note.—July 25, 1892, by consent of the Trustees, section fourth was modified to enable the Trustees to open the Museum free to the public "throughout the year, excepting Mondays, but including Sunday afternoons and two evenings of each week."

June 29, 1893, by consent of the Trustees, section fourth was modified to enable the Trustees to open the Museum free of charge to the public "throughout the year for five days in each week, one of which shall be Sunday afternoon, and also two evenings of each week."

CONSTITUTION

OF THE

AMERICAN MUSEUM OF NATURAL HISTORY IN THE CITY OF NEW YORK

REVISED AND AMENDED TO FEBRUARY 7, 1916

ARTICLE I

This Corporation shall be styled THE AMERICAN MUSEUM OF NATURAL HISTORY.

ARTICLE II

The several persons named in the charter, and such others as they may add to their number, which shall not exceed twentyfive in all at one time, and in addition, the Mayor, the Comptroller, and the President of the Department of Public Parks, of the City of New York, for the time being, *ex-officio*, shall be the Trustees to manage the affairs, property and business of the Corporation.

The members of the Board of Trustees holding office at the time of the regular quarterly meeting of November, 1905, shall then, or at the first meeting of the Board thereafter, be divided by lot into five classes of five members each, to serve for the terms of one, two, three, four and five years respectively from the date of the annual meeting of February, 1906. The Board of Trustees at each annual meeting thereafter, or an adjournment thereof, shall by ballot, by a majority vote of the Trustees present at the meeting, elect five Trustees to supply the places of the class whose term expires at that meeting; said newly elected Trustees to hold office for five years or until their successors are elected. In case of a vacancy in the Board by death, resignation, disqualification or otherwise, the vacancy shall be filled by ballot, in like manner, by the Board of Trustees at any regular meeting or special meeting, for the unexpired term. No person shall be eligible for election as Trustee unless his name shall be presented by the Nominating Committee at a regular or special meeting of the Board previous to the meeting at which his name shall be acted

upon. Written notice of such election and the vacancy to be filled shall be sent to the Trustees at least one week prior to said meeting.

ARTICLE III

The Trustees shall meet regularly, on the first Monday of every February and May, and the second Monday of November, at an hour and place to be designated, on at least one week's written notice from the Secretary, and shall annually, at the regular meeting in February, elect the officers and committees for the ensuing year. They shall also meet at any other time to transact special business on a call of the Secretary, who shall issue such call whenever requested so to do, in writing, by five Trustees, or by the President, and give written notice to each Trustee of such special meeting, and of the object thereof, at least three days before the meeting is held.

ARTICLE IV

SECTION 1. The officers of said Corporation shall be a President, a First Vice-President, a Second Vice-President, a Treasurer and a Secretary, who shall be elected from among the Trustees. These officers shall be elected by ballot, and the persons having a majority of the votes cast shall be deemed duly elected. They shall hold their offices for one year or until their successors shall be elected.

SEC. 2. The Board of Trustees shall appoint each year, in such manner as it may direct, the following Standing Committees: an Executive Committee, an Auditing Committee, a Finance Committee and a Nominating Committee. These Committees are all to be elected from the Trustees, and the members shall hold office for one year or until their successors shall be elected.

The Board of Trustees shall also have authority to appoint such other committees or officers as they may at any time deem desirable, and to delegate to them such powers as may be necessary.

The Board of Trustees shall have power to appoint a Director who, acting under the authority and control of the President, shall be the chief administrative officer of the Museum; but shall not be a member of the Board. He shall hold office during the pleasure of the Board.

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ARTICLE V

SECTION 1. The President shall have the general supervision, direction and control of the affairs of the Corporation, and shall preside at all the meetings of the Museum and of the Trustees. In his absence or inability to act, the First or Second Vice-President shall act in his place, or in the absence of these officers, a Trustee appointed by the Executive Committee.

SEC. 2. The Secretary shall be present, unless otherwise ordered by the Board, at all the meetings of the Museum and Trustees, of the Executive Committee and such other Committees as the Board may direct. He shall keep a careful record of the proceedings of such meetings, shall preserve the seal, archives and correspondence of the Museum, shall issue notices for all meetings of the Trustees and various committees, and shall perform such other duties as the Board may direct.

The Board of Trustees shall have power to appoint an Assistant Secretary, who, under its direction, shall perform the duties of the Secretary in his absence or inability to act. The Assistant Secretary shall be an administrative officer of the Museum and shall act under the direction of the President or the Secretary. He shall hold office during the pleasure of the Board.

SEC. 3. The Treasurer shall receive and disburse the funds of the Museum. He shall report in writing, at each regular meeting of the Trustees, the balance of money on hand, and the outstanding obligations of the Museum, as far as practicable; and shall make a full report at the annual meeting of the receipts and disbursements of the past year, with such suggestions as to the financial management of the Museum as he may deem proper.

The Board of Trustees shall have power to appoint an Assistant Treasurer, who shall perform such duties as it may direct, and who shall hold office during its pleasure.

SEC. 4. The accounts of the Museum shall be kept at the General Office, in books belonging to it, which shall at all times be open to the inspection of the Trustees.

ARTICLE VI

The Executive Committee shall consist of nine Trustees, the President, the Secretary and the Treasurer *ex-officio* and six others, to be appointed each year in the manner provided in Article IV. They shall have the control and regulation of the col-

lections, library and other property of the Museum; and shall have power generally to conduct the business of the Museum, subject to the approval of the Board. Five members of the Committee shall constitute a quorum for the transaction of business.

ARTICLE VII

The Auditing Committee shall consist of three Trustees. They shall have the books of the Museum duly audited, at least once in six months, by an authorized public accountant to be selected by them.

ARTICLE VIII

The Finance Committee shall consist of five Trustees, the Treasurer *ex-officio* and four others to be elected each year in the manner provided in Article IV. They shall have general charge of the moneys and securities of the Endowment and other permanent funds of the Museum, and such real estate as may become the property of the Corporation, with authority to invest, sell and reinvest the same, subject to the approval of the Board of Trustees.

Three members shall constitute a quorum.

ARTICLE IX

The Nominating Committee shall be composed of three Trustees, to whom shall be first submitted the names of any persons proposed as candidates for election to membership in the Board of Trustees. The Committee shall report on such candidates from time to time, as it may deem to be for the interest of the Museum. A fortnight before the annual meeting they shall prepare and mail to each member of the Board of Trustees a list of the candidates for officers and Trustees to be balloted for at the said meeting.

ARTICLE X

Nine Trustees shall constitute a quorum for the transaction of business, but five Trustees meeting may adjourn and transact current business, subject to the subsequent approval of a meeting at which a quorum shall be present.

ARTICLE XI

By-Laws may be made from time to time by the Trustees providing for the care and management of the property of the

Corporation and for the government of its affairs, and may be amended at any meeting of the Trustees by a vote of a majority of those present, after a month's notice in writing of such proposed amendment.

ARTICLE XII

The incorporators of The American Museum of Natural History shall be designated as Founders of the Museum.

Any person contributing or devising \$50,000 in cash, securities or property to the funds of the Museum may be elected a Benefactor of the Museum.

Any person contributing \$25,000 in cash, securities or property to the funds of the Museum may be elected an Associate Founder of the Museum, who after being so elected shall have the right in perpetuity to appoint the successor in such associate foundership.

Any person contributing \$10,000 to the funds of the Museum may be elected an Associate Benefactor of the Museum, who after being so elected shall have the right in perpetuity to appoint the successor in such associate benefactorship.

Any person contributing \$1,000 to the funds of the Museum, at one time, may be elected a Patron of the Museum, who after being so elected shall have the right in perpetuity to appoint the successor in such patronship.

Any person contributing \$500 to the funds of the Museum, at one time, may be elected a Fellow of the Museum, who after being so elected shall have the right to appoint one successor in such fellowship.

No appointment of a successor shall be valid unless the same shall be in writing, endorsed on the certificate, or by the last will and testament.

Any person contributing \$100 to the funds of the Museum, at one time, may be elected a Life Member of the Museum.

Any person may be elected to the above degrees who shall have given to the Museum books or specimens which shall have been accepted by the Executive Committee, or by the President, to the value of twice the amount in money requisite to his admission to the same degree.

Benefactors, Associate Founders, Associate Benefactors, Patrons, Fellows and Life Members shall be elected by the Board

of Trustees or by the Executive Committee, and the President and Secretary shall issue diplomas accordingly under the seal of the Museum.

In recognition of scientific services rendered, the Trustees may also elect Honorary Fellows of the Museum in their discretion.

ARTICLE XIII

Any Trustee who shall fail to attend three consecutive regular meetings of the Board shall cease to be a Trustee, unless excused by the Board.

ARTICLE XIV

No alterations shall be made in this Constitution, unless at a regular meeting of the Trustees, or at a special meeting called for this purpose; nor by the votes of less than a majority of all the Trustees; nor without notice in writing of the proposed alterations, embodying the amendment proposed to be made, having been given at a previous regular meeting.

BY-LAWS

REVISED AND AMENDED TO FEBRUARY 7, 1916

Ι

If any Trustee shall accept a salary from this Corporation he shall thereby be disqualified for the time being from acting as a Trustee thereof; provided, that the Board of Trustees shall have power to suspend the operation of this law in any special case.

Π

Any vacancies occurring in the membership of the several committees during the interval between the regular meetings of the Board of Trustees may be filled at a regular meeting of the Executive Committee, until the next meeting of the Board.

III

The regular meetings of the Executive Committee shall be held on the third Wednesday of each month, but special meetings may be held at any other time on a two days' call issued by order of the President, or at the request of three of its members.

IV

All bequests or legacies, not especially designated, and all membership fees, excepting Sustaining, Annual and Associate Membership fees, shall hereafter be applied to the *Permanent Endowment Fund*, the interest only of which shall be applied to the use of the Museum as the Board shall direct.

v

SECTION 1. No indebtedness (other than for current expenses) shall be incurred by any committee, officer or employee of the Museum, except as provided for in the Constitution.

SEC. 2. No bills shall be paid unless approved by the Director or, in his absence, the Assistant Secretary, and counter-

signed by one of the following named Trustees: President, Chairman of the Executive Committee, or Treasurer.

SEC. 3. The accounts of the Museum shall be under the care of a Bursar, who, on recommendation of the President and the Treasurer, shall be appointed by the Board of Trustees and be under its direction. He shall give such bonds for the faithful performance of his duties as the Board may direct, and shall hold office during the pleasure of the Board. The Bursar, acting under the direction of the President or Treasurer, shall be the official representative of the Treasurer at the Museum, and as such shall be the head of the Treasurer's office there.

VI

The Board of Trustees shall have power to appoint a Regrecommendation of the Director, a Superintendent of Building and such other officers as may be deemed necessary, who, acting under the instruction of the Director, shall have charge of the construction, maintenance, alterations and repairs of the buildings, and shall be responsible for their sanitary condition. They shall hold office during the pleasure of the Board.

VII

The Board of Trustees shall have power to appoint, on istrar, who, acting under the instruction of the Director or Assistant Secretary, shall inspect all incoming and outgoing shipments, and shall attend to the details of matters relating to customs.

VIII

Benefactors, giving \$50,000, are each entitled to 1 Subscriber's Ticket, 10 Complimentary Season Tickets and 10 Ticket and 10 Tickets for a single admission.

Associate Benefactors, giving \$10,000, are each entitled to 1 Subscriber's Ticket, 10 Complimentary Season Tickets and 10 Tickets for a single admission.

Patrons, giving \$1,000, are each entitled to 1 Subscriber's Ficket, 5 Complimentary Season Tickets and 10 Tickets for a single admission.

Fellows, giving \$500, are each entitled to 1 Subscriber's Tickets for a single admission.

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Life Members, giving \$100, are each entitled to 1 Subscriber's Ticket and 7 Tickets for a single admission.

Sustaining Members, paying \$25 yearly, are each entitled to 1 Subscriber's Ticket and 5 Tickets for a single admission.

Annual Members, paying \$10 yearly, are each entitled to 1 Subscriber's Ticket and 4 Tickets for a single admission.

Associate Members, paying \$3.00 yearly, are each entitled to 1 Subscriber's Ticket, admitting to the Members' Room, and 2 Tickets for a single admission; also to current copies of the Museum Journal and the Annual Report.

IX

The Board of Trustees hereby creates a class of honorary Members, without membership fee, to be designated as Corresponding Members. Upon recommendation of the Scientific Staff, any person interested in or actively engaged in scientific research may be elected by the Board of Trustees a Corresponding Member, such election being for a period of five years and subject to renewal. Corresponding Members shall be entitled to current numbers of *Natural History* and to a copy of such scientific publications of the Museum as they may desire for the prosecution of their researches.

NOTE.—A Subscriber's Ticket admits to the Members' Room, also to all Receptions and Special Exhibitions, and may be used by any member of the Subscriber's family.

The Single Admission Tickets admit the bearers to the Members' Room, and are issued to Subscribers for distribution among friends and visitors.

FOR EQUIPMENT AND CASE CONSTRUCTION OF THE AMERICAN MUSEUM OF NATURAL HISTORY

legal enactments of 1920

BY THE BOARD OF ESTIMATE AND APPORTIONMENT

RESOLVED, By the Board of Estimate and Apportionment that, pursuant to the provisions of section 169 of the Greater New York Charter, the Comptroller be and he is hereby authorized to issue tax notes of the City of New York to an amount not exceeding one hundred fifteen thousand (\$115,000), the redemption of which shall be included in the annual tax levies in the manner provided by section 189 of the Charter; the proceeds to the amount of the par value thereof to be used, under the jurisdiction of the Commissioner of Parks, Boroughs of Manhattan and Richmond, for the following improvements and equipment for the American Museum of Natural History:

Item 1-Material for and installation of 4-ton ice machine	\$3,500.00
Item 2—Blower system for carpenter shop to remove sawdust, etc.	2,000.00
Item 3-Glass cutting and polishing machinery	500.00
Item 4-Motor for stone cutting saw	200.00
Item 5-Motor for sand papering machine	200.00
Item 6-Panel switchboard and separate lighting system for	
control of lights to exhibition groups	5,000.00
Items 7 to 20-Exhibition cases	37,483.63
Item 21 to 23 Inclusive-Miscellaneous cases	4,270.64
Item 24 to 29 Inclusive—Storage cases	37,064.00
Item 30-Store-room with metal shelves above present storage	•
(attic), sixth floor	696.00
Item 31-Storage rack and shelving (attic), sixth floor	900.00
Item 32—Incidental cases and equipment	23,185.73

Total.....\$115,000.00

-provided, however, that no encumbrance by contract or otherwise shall be made against this authorization nor shall bids upon contemplated contracts be advertised for until after approval by the Board of Estimate and Apportionment of the plans, specifications, estimates of cost, and forms of proposed contracts for said equipment, which must be submitted to said Board by the Commissioner of Parks, Boroughs of Manhattan and Richmond; nor shall any architect, engineer, expert or departmental employee be engaged or employed as a charge against such authorization except after approval by said Board of such employment and of the fee or wage to be paid by preliminary and final contract, voucher or budget schedule, which are to be similarly submitted, unless in the case of departmental employees such employment is in accordance with schedules approved by said Board.

A true copy of resolution adopted by the Board of Estimate and Apportionment, June 11, 1920.

> JAMES MATTHEWS Assistant Secretary.

APPROPRIATION AND EXPENDITURES THEREON TO DECEMBER 31, 1921

RECEIPTS: By direct appropriation (C. D. P. 3F.)		\$115,000.00
Expenditures:		
Mechanics Pay-roll	\$26,472.00	
Contracts, slidetite cases	15,465.00	
Open market orders	22,801.18	64,738.18
Balance December 31, 1921		\$50,261.82

FOR THE CONSTRUCTION AND EQUIPMENT OF THE SOUTHEAST WING AND COURT BUILDING OF THE AMERICAN MUSEUM OF NATURAL HISTORY

LEGAL ENACTMENTS OF 1921

By the Board of Estimate and Apportionment

RESOLVED, By the Board of Estimate and Apportionment, that, pursuant to the provisions of section 169 of the Greater New York Charter, as amended by chapter 618 of the Laws of 1921, the Comptroller be and is hereby authorized to issue, in the manner provided by section 169 of the Greater New York Charter, serial bonds of The City of New York, in an amount not exceeding one million five hundred thousand dollars (\$1,500,-000), at such rate of interest as the Commissioners of the Sinking Fund shall prescribe; the proceeds to the amount of the par value thereof to be used by the Department of Parks, Borough of Manhattan, for the construction and equipment of the southeast wing and court building of the American Museum of Natural History; the cost of general construction, estimated at approximately one million three hundred thousand dollars (\$1,300,000), to be financed by an issue of serial bonds, the principal thereof to mature in equal annual installments within a period not exceedthereof to mature in equal annual installments within a period not exceed-ing forty (40) years; the cost of plumbing, heating and ventilating, and electric work and fixtures, estimated at approximately one hundred and ninety thousand dollars (\$190,000), to be financed by an issue of serial bonds, the principal thereof to mature in equal annual installments within a period not exceeding fifteen (15) years; and the cost of furniture and equipment, estimated at approximately ten thousand dollars (\$10,000), to be financed by an issue of serial bonds, the principal thereof to mature in equal annual installments within a period not exceeding ten (10) years; said apportionment of the costs to be subject to modification if necessary, upon the awarding of the contracts for the several portions of the work: upon the awarding of the contracts for the several portions of the work; provided, however that no encumbrance by contract or otherwise shall be made against these authorizations, nor shall bids upon contemplated contracts be advertised for until after approval by the Board of Estimate and Apportionment or its duly authorized representative of such expenditure, or of the plans, specifications, estimates of cost and forms of such contracts, nor shall any architect, engineer, expert or departmental employee be engaged or employed as a charge against such authorization, except after approval by said Board of such employment and of the fee or wage to be paid by preliminary and final contract voucher or budget schedule, unless in the case of departmental employees such employment is in accordance with exceeded a contract be with Board of Section 2015 is in accordance with schedules approved by said Board.

A true copy of resolution adopted by the Board of Estimate and Apportionment, December 28, 1921.

JAMES MATTHEWS Assistant Secretary.

BOND ISSUES FOR THE CONSTRUCTION AND EQUIPMENT OF THE AMERICAN MUSEUM OF NATURAL HISTORY

LEGAL ENACTMENTS OF 1921 By the Legislature Chapter 618

An Act to amend the Greater New York Charter, in relation to use of the proceeds of bond issues.

Became a law May 6, 1921, with the approval of the Governor. ACCEPTED BY THE CITY

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Subdivision nine of section one hundred and sixty-nine of the Greater New York charter, as re-enacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one, and last amended by chapter nine hundred and sixty of the laws of nineteen hundred and twenty, is hereby amended to read as follows:

9. *****

The city of New York shall not, except as hereinafter provided, expend any part of the proceeds of sales of corporate stock or serial bonds for other than revenue-producing improvements, except for the erection of school buildings and the acquisition of sites therefor and the acquisition of houses for school purposes, and except for the erection and equipment of the buildings of the American Museum of Natural History which by charter and contract with the city is an adjunct of the educational system of the city, ****

§ 2. This act shall take effect immediately.

STATE OF NEW YORK Office of the Secretary of State ss:

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom, and of the whole of said original law.

Given under my hand and the seal of office of the Secretary of State, at the City of Albany, this twenty-fifth day of May in the year one thousand nine hundred and twenty-one.

C. W. TAFT, Second Deputy Secretary of State.

[SEAL]

NINTH ANNUAL REPORT of the PENSION BOARD

OF

THE AMERICAN MUSEUM OF NATURAL HISTORY

FOR THE YEAR 1921

OFFICERS AND MEMBERS OF THE PENSION BOARD

1921

Chairman Felix M. WARBURG Vice-Chairman Ralph W. Tower

Treasurer Henry P. Davison Secretary George N. Pindar

Trustee Members

Adrian Iselin Walter B. James A. Perry Osborn Felix M. Warburg

Employee Members

HARRY F. BEERS

George N. Pindar

RALPH W. TOWER

Bursar Frederick H. Smyth Counsel Lewis L. Delafield

Consulting Actuary S. Herbert Wolfe Medical Examiner George M. Mackenzie, M. D.

To the President and Trustees of The American Museum of Natural History and to the Subscribers to the Fund:

In accordance with the Rules and Regulations, I have the honor to transmit to you herewith the Ninth Annual Report of the activities of the Pension Board and of its financial operations for the fiscal year ending December 31, 1921.

> FELIX M. WARBURG, Chairman.

February 1, 1922

With the gradual return of our industries to normal, thought is being given as never before to the obligation of employers to their workers, and to the best way to provide for those who have devoted themselves faithfully and unselfishly and frequently without hope or thought of reward to building up the plant or institution in which they are engaged. The employer who has solved this problem by recognizing his obligation, in a manner which has not the savor of paternalism, by an active and equitable system of provision for aged and long-service workers, is bound to have his reward in the increased loyalty, energy and efficiency and the greater permanency of individual workers. Many institutions and private corporations have dealt with the situation by installing pension systems similar to our own plan, group insurance or wage bonuses. Frequently, however, the systems require too long a service period or provide too low an annuity to make retirement possible for the employee. This seems in a great measure to be the case with our own pension system.

On seeking the opinion of members who have given especial thought to the workings of our Rules and Regulations, we find three general criticisms:

- 1. Too long a service period is required for retirement.
- 2. The pensions allowed are too small to permit of voluntary retirement.
- 3. The death gratuities are inadequate.

The Pension Board is frequently importuned by its employee members to adopt amendments on these points, and it is to be hoped that, after another survey has been made, revision along the suggested lines may be found possible, in view of the highly satisfactory financial condition of the Fund.

It is thought important, in this connection, to call attention to a condition which, at the time of the adoption of the present Rules, was not allowed for in determining pension requirements of either service or age,—the wonderful loyalty to the Museum which prevails among our employees. We have a number of contributors who are eligible to retirement on a living annuity, but who prefer to continue at the Museum in their chosen activities. Unfortunately, however, we have also some members who deserve and desire to be superannuated, but whose annuities would not be sufficient for their support. For these people, increased allowances should be provided. Service periods for retirement on half pay should be reduced by five years, provided such change is found possible without affecting the integrity of the Fund.

Surprise is always expressed at the small sums paid to the beneficiaries of deceased contributors, and it is felt that, especially in the case of the lower-salaried workers with long-service periods to their credit, this provision of our Rules fails to meet the needs of the bereaved families. Either the gratuities should be increased or some additional form of insurance should be adopted. The group life insurance plan seems to offer a solution. A vote recently taken among the employees indicates that such a form of insurance would be acceptable if the premiums could be arranged on the same basis as Pension Fund payments, i. e., equal contributions on the part of the Corporation and employees. The Pension Board recommends the adoption of such a form of insurance in addition to the insurance features included in the Pension Plan.

Sudden deaths among our employees have again brought to our attention the advantage to be derived from a life extension service consisting of periodical physical examinations. There is little doubt that such a service would be generally acceptable in the Museum; but it probably would not be successful unless provided free of charge. Such an arrangement does not seem feasible or advisable. As substitute measures, however, with the same object of promoting the health of our employees, two other suggestions have been made: first, that lectures on health and hygiene be given to the employees by reliable lecturers secured through the Museum's Department of Public Health; second, that, in view of the distinctly educational character of our institution, a system of periodic extended vacations, similar to those in force in academic circles, be adopted.

Originally appointed only to supervise the working of the Pension Rules, the Pension Board finds the scope of its work greatly extended. It has recently been found necessary for the Chairman of the Board to appoint a Welfare Committee, consisting of Mr. A. Perry Osborn, Chairman, Dr. James, Mr. Pindar and Mr. Warburg, ex-officio, to handle the problems of employee welfare which are constantly arising. During the past year, thirteen employees have been provided with needed physical examination and medical advice, hospital treatment or surgical assistance. Nor has the Committee's work stopped with the contributors. Services have also been extended to members of employees' families.

At the close of 1921, the Pension Fund has an active membership of 248, with 3 employees on the retired list.

During the year, we have lost by death three members, concerning whom particular mention is made in another part of this report.

We wish to record the very satisfactory and efficient service of Dr. George M. Mackenzie, the friendly cooperation of Dr. John A. Fordyce, the constructive criticisms of Mr. S. Herbert Wolfe and the advice and counsel of Mr. Lewis L. Delafield. These gentlemen, of high standing in their respective professions, freely give of their time and thought to help our employees and to assist in all possible ways the operation of our pension system.

Mr. Richard B. Kelly and Mr. Adrian Iselin have very generously extended to our employees the use of their endowed hospital beds. To others, too, who have requested that their names be omitted, we acknowledge with deep appreciation their solicitude and generosity.

In closing this, the Ninth Report of the Pension Board, it seems fitting to state that the Board, through its sub-committees, is seeking the best means to provide for the contributors adequate pensions, suitable gratuities and helpful medical and surgical attention; and the members of the Board are gratified with the very responsive attitude of the contributors towards its aims and recommendations.

Deceased Subscribers

We deeply regret to have to report the deaths of the following members during the year 1921:

JOEL ASAPH ALLEN

Joel Asaph Allen was born in Springfield, Massachusetts, on July 19, 1838. For thirty-six years he directed the development of our Department of Mammalogy. In addition to his departmental work, Dr. Allen was Editor of the scientific publications of the Museum for nearly thirty years, and during this period wrote and published more than one thousand papers on natural history subjects, particularly birds and mammals. His interest in young research workers, his generous sympathy, consideration and helpfulness endeared him to all who knew him. He died at Cornwall-on-Hudson, on August 29, 1921.

ERWIN S. CHRISTMAN

Erwin S. Christman was born on January 14, 1885, in Clinton, New Jersey. At the age of fifteen years, he came to the Museum to try his skill in drawing skulls of fossil mammals. For one so young he possessed a peculiarly keen sense of light and shadow, and his ability, industry and pleasing personality quickly attracted the attention of the staff of the Department of Vertebrate Palaeontology. With their encouragement, he soon earned recognition as an artist who was able to portray his subjects faithfully. His very sudden death came as a shock to all, and his passing has left a void among his many friends in the Museum. He died on November 27, 1921.

FRANK C. SCHAEFFER

Frank C. Schaeffer was born in Schoharie, New York, on April 26, 1860. Born on a farm handed down from his ancestors, who purchased their property from the Indians, he followed agricultural pursuits for the greater part of his life. In 1908, he entered the employ of the Museum, where for thirteen years he was engaged in the packing department. Mr. Schaeffer early earned for himself the esteem of his fellow workers. He possessed a most likable personality, as was evidenced by his host of friends. An excellent worker, a cheerful companion and a faithful and industrious employee, he suffered long and patiently, and passed to the great beyond on February 19, 1921.

HEALTH HABITS By Dr. George M. Mackenzie

The following suggestions are offered in response to a request for practical advice in regard to the prevention of disease and the maintenance of an efficient healthy body.

Preventive medicine, public health, personal hygiene, are phases of medical science claiming a constantly increasing attention because of the growing recognition of the efficacy of preventive measures, not only for the community as a whole, but also for the individual.

I. TUBERCULOSIS. It is now known that almost all, and probably all, individuals in civilized communities at some time during early life become infected with tuberculosis. A great majority, of course, never manifest any symptoms at the time of first infection. When consumption develops in adult life it is in a majority of cases due to the fact that the health of the individual has become impaired by unhygienic conditions of living, or harmful habits, and the germs which have been present harmlessly in the body since childhood, take root, grow and multiply and infect the lungs or other organs. The individual then has consumption and may or may not recover. Impairment of health, lowering of resistance to tuberculosis, a "run down condition," are so largely dependent upon health habits that with a very small amount of effort in habit formation, the individual, barring dire poverty, can almost certainly insure himself against consumption.

The following are the most important preventive habits as far as tuberculosis is concerned:

(1) The daily fresh air and sunlight habit.

(2) Eight or nine hours sleep with open windows.

(3) Proper ventilation of work rooms.

(4) Sufficient nourishing food at regular times. If you are uncertain which foods to eat, which to avoid and how much you should eat, ask your doctor for instructions.

(5) Avoidance of overwork.

(6) Regularity in sleeping, eating, exercising in the open air and work.

Not only will these habits make tuberculous infection highly improbable, but they will also render the individual less susceptible to many other diseases.

II. CONSTIPATION. The most common cause of "feeling mean," of headaches, or a lack of a sensation of health and vigor, is sluggishness of the bowels. It is universal, unhealthful and unnecessary. With only a little effort in habit formation no one need use cathartics.

(1) Water: One or two glasses of water before retiring and again first thing in the morning.

(2) Diet: Include in the daily diet such food as prunes, baked apples, cooked or raw fruits, spinach, celery, lettuce, and if necessary, bran biscuits and figs.

(3) Habit: At exactly the same time every day go for a bowel movement.

III. PERIODIC PHYSICAL EXAMINATION. Since certain common diseases, and notably cancer, often produce no symptoms until the time is past when treatment is effective, it is the part of prudence to let your doctor examine you every six months for incipient disease of which you are unaware. If such a habit were universal, cancer would frequently, instead of rarely, be curable.

IV. TEETH. It is now quite definitely known that bad teeth are frequently the cause of disabling diseases. The habit of going once a year to a good dentist and having the teeth put in order, coupled with the habit of thoroughly cleansing the mouth twice daily, would eliminate many intestinal diseases and a great deal of rheumatism.

RETIREMENTS

Name	Former Position	Date of Retirement	Yearly Allowance	
H. Ernestine Ripley	.Secretary.	.Jan. 1, 1919	\$416.00	16 years
George A. Young	.Carpenter.	.Feb. 1, 1919	253.03	15 years
Adam Hermann	Preparator.	.Jan. 1, 1920) 988.00	Life

FINANCIAL STATEMENT

OF THE

PENSION FUND

OF THE

American Museum of Natural History

1921

Invested Funds	Par Value	Book Value
Endowment Fund Investment Fund		
Total	190,600.00	\$171,672.60

							,										
	Book Value	\$4,687 50	4,725 00	4,887 50	5,050 00	4,668 75	4,687 50	4,681 25	4,706 25	4,533 75	4,825 00	4,518 75	4,717 50	4,656 25	4,808 75 4,608 75	821 25 831 25	1,592 50
	Date Acquired	Feb. 26, 1914	7, 1914	4, 1915	29, 1915	5, 1916	29, 1916	29, 1916	29, 1916	29, 1916	17, 1916	18, 1916	30, 1916	12, 1917	16, 1917 19, 1917	12, 1918 12, 1918	12, 1918
	¥	Feb.	July	June	Dec.	May	May	May	May	May	July	Oct.	Dec.	Apr.	July Oct.	Mar. Mar.	Mar.
	Ann. Int.	\$200 00	200 00	225 00	250 00	225 00	200 00	200 00	225 00	200 00	225 00	200 00	200 00	200 00	240 00 225 00	40 00 00	80 00
D FUNDS	Interest Payable	4% MarSept.	4% May-Nov.	4½% June-Dec.	5% June-Dec.	4½% AprOct.	4% AprOct	4% AprOct.	41/2% AprOct.	4% JanJuly	41⁄2% JanJuly	4% May-Nov.	4% MarSept.	4% JanJuly	May-Nov. June-Dec.	AprOct. AprOct.	MarSept.
VESTEI	Rate of Int.	4%	4%	41/2%	5%	41/2%	4%	4%	41/2%	4%	41/2%	4%	4%	4%	4% 41/2%	4% 4%	4%
OF IN	Due	2008	1987	1965	1995	2014	1995	1996	2013	1955	2047	1955	1958	1940	1941 1965	1995 1996	2008
STATEMENT OF INVESTED FUNDS			Chicago & Northwestern Kaulway Company, Gen- eral Mortgage Bonds				General Mortgage Bonds								-	Mortgage Bonds	
	Par Value	\$5,000 00 7 000 00	5,000 00	5,000 00	3,000 00	3,000 00	2,000 00	3,000 00	2,000 00	3,000 00	2,000 00	3,000 00	3,000 00 F 000 00		5,000 00	1,000 00	z,000 00

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Pension Board

in account with H. P. DAVISON, Treasurer

Par Value	Securities	Due	Rate of Int.	Interest Payable	Ann. Int.		Date Acquired	Book Value	
2,000 00		1955	4%	JanJuly	80 00		Mar. 12, 1918	1,582 50	
4,000 00	Bonds	1961	41/4%	41⁄4 % JanJuly	212 50	May	10, 1918	7	
2.000 00		1995	4%	4% AprOct.	160 00	Aug.	19, 1918	3,250 00	
5.000 00	•	1958	4%	MarSept.	80 00	Aug.	20, 1918	1,602 50	
3.000 00		1928	41/4%	MarSept.	212 50	Nov.	30, 1918	4,890 00	
3,000 00		1958	4%	MarSept.	120 00	Jan.	27, 1919	2,486 25	
3,000 00 2,000 00 7,000 00	Mortgage Bonds N. Y. C. Municipal Bonds Pennsyvaria R. R. Co, General M Thited States of Amorico Thirad	2008 1927 1968	4% 41/2% 5%	MarSept. JanJuly June-Dec.	120 00 135 00 100 00	Jan. Sept. Oct.	27, 1919 19, 1919 2, 1919	2,460 00 3,001 88 1,827 50	
5.000 00	-	1928	41/4%	MarSept.	212 50	Oct.	11, 1920	4,535 13	
5.500 00	-	1933/38	: 41/4 %	AprOct.	212 50	Nov.	12, 1920	4,364 13	
5,500 00	Bonds	1942	41/4%	May-Nov.	233 75	Jan.	20, 1921	4,838 44	
5,000 00	Bonds	1942	41/4%	May-Nov.	233 75	Feb.	10, 1921	4,761 44	
40,000 00	America Second Liberty	1928	41⁄4%	MarSept.	212 50	Apr.	7, 1921	4,522 12	
5,600 00	Bonds	1942	41/4%	May-Nov.	1,700 00	July	22, 1921	34,461 88	
5,000 00	Bonds	1942	41/4%	May-Nov.	238 00	Aug.	10, 1921	4,912 82	-
5.000 00	Bonds	1942	41/4%	May-Nov.	212 50	Dec.	10, 1921	4,858 13	
	Bonds	1942	41/4%	May-Nov.	212 50	Dec.	30, 1921	4,854 13	
190,600.00				1.00	\$8,063 00			\$171,672 60	-

\$190

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Pension Board

PENSION FUND ACCOUNT

Receipts, 1921

Cash on Hand January 1, 1921 Contributions of Subscribing Employees: Deductions of 3% from Payrolls of			\$12,703.84
City Maintenance Account	\$8,155.44		
General Account	2,950.12		
Morris K. Jesup Fund Account	4,054.81		
Special Funds Account	115.45		
Corporate Stock Account	365.04		
Incidental Account			
	\$15,646.07		
Personal Contributions of Subscribing Employees		\$16,246.89	
Contributions of Board of Trustees:	<u></u>		
To Equal Contributions of Subscribing Employees		16,246.89	
Return of Contributions (Previously Refunded)		446.59	
Interest on Repayments of Contributions and			
Interest		10.47	
Interest on Deferred Contributions		33.47	
Income from Investment Fund		6,870.92	
Income from Endowment Fund		50.34	
Interest on Credit Balances		196.06	40,101.63
Investment Fund:			
Proceeds of Sale of Bonds			34,418.12
Bursar's Account			500.00

\$87,723.59

Examined and Approved {Adrian Iselin {A. Perry Osborn} Auditing Committee.

PENSION FUND ACCOUNT

Disbursements, 1921

Return of Contributions Interest on Contributions Returned	\$3,292.90 269.21	\$3,562.11	
Service Pensions "A"	\$253.03		
Service Pensions "E"	988.00		
Pension in Event of Illness, Dismissal, Etc	416.00		
Death Gratuities Paid Under Section 13	5,525.55		
Gratuity Awarded Under Sections 14 and 27	1,417.24	8,599.82	
Expenses		50.00	\$12,211.9 3
Purchase of Securities:			
Investment Fund			68,559.21
Loan Account			500.00
Cash on Hand December 31, 1921:			
Deposited with the United States Trust Company of New York		\$5,952.45	
Deposited with the Colonial Bank (Bursar's			
Account)		500.00	6,452. 45
		_	<u> </u>

\$87,723.59

E. and O. E.

NEW YORK, December 31, 1921.

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H. P. DAVISON, Treasurer.

PENSION FUND-SPECIAL FUNDS ACCOUNT

Receipts, 1921

American Museum Liberty Loan No. 1: Cash on hand January 1, 1921	\$ 05		
Transferred from Interest on Credit Balances	-	\$ 15.69	
American Museum Liberty Loan No. 2: Cash on hand January 1, 1921		.43	
American Museum Liberty Loan No. 3:			
Transferred from Interest on Credit Balances Transferred from Interest Unexpended, Liberty Loan	\$12.24		
No. 2	.43	12.67	
American Museum Liberty Loan No. 4:			
Transferred from Interest on Credit Balances		9.67	
American Museum Victory Liberty Loan: Transferred from Interest on Credit Balances		7.49	\$ 45.95
Gratuity Account:			
Transferred from Pension Fund Account, Gratuity Awarded Under Sections 14 and 27			1,417. 24
Interest on Credit Balances:			
Forward from 1920		\$100.79	110.07
Earnings to December 31, 1921		19.08	119.87
Welfare Fund:			
Transferred from General Account		\$222.13	077 00
Transferred from Interest on Credit Balances		55.75	277.88
		······································	\$1,860.94

Examined and	{ Adrian Iselin }	Auditing
Approved	{ A. Perry Osborn }	Committee.

in account with H. P. DAVISON, Treasurer	259
PENSION FUND-SPECIAL FUNDS ACCOUNT	
Disbursements, 1921	
Liberty Loan Accounts: Advances for 1920 Accounts	\$ 45.52
American Museum Liberty Loan No. 2: Transferred to Liberty Loan No. 3 Account	.43
Gratuity Account:	
Payment of Gratuity Awarded Under Sections 14 and 27	1,417.24
Welfare Fund:	222.13
Interest on Credit Balances: Transferred to Welfare Fund \$ 55.7	' 5
Transferred to Liberty Loan Accounts	
Cash on Hand December 31, 1921:	74.83
Deposited with United States Trust Company of New York	\$1,860.94
	φ1,000.94

E. and O. E. NEW YORK, December 31, 1921. H. P. DAVISON, Treasurer.

