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FORTY-EIGHTH ANNUAL REPORT OF THE

TRUSTEES

OF

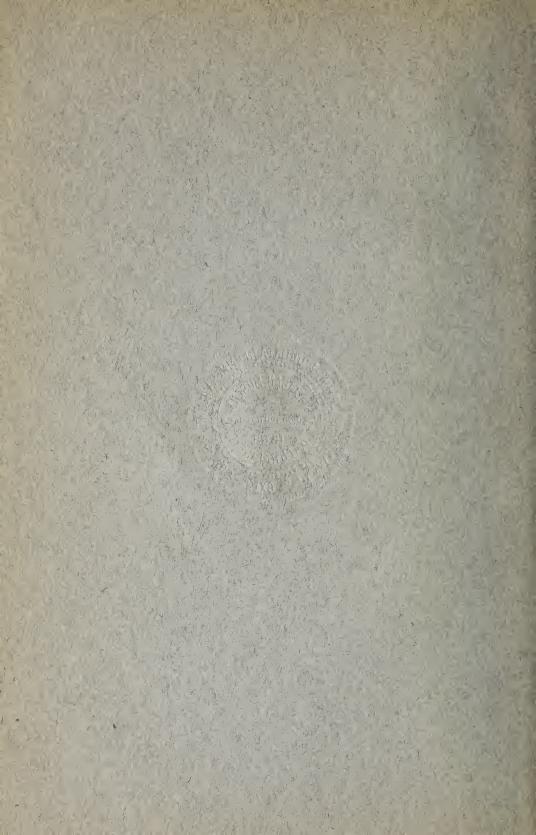
# THE AMERICAN MUSEUM OF NATURAL HISTORY

FOR THE YEAR 1916

A FREE INSTITUTION

FOR THE PEOPLE FOR EDUCATION FOR SCIENCE

> NEW YORK Issued May 1, 1917



# THE AMERICAN MUSEUM OF NATURAL HISTORY

Incorporated in 1869



## MEMBERSHIP AND ENDOWMENT

There are more than four thousand members of the Museum, residents of the United States and other countries, who support its educational and scientific work and enjoy its lectures, publications and other privileges.

Associate Members	(no	n-r	esi	<b>l</b> en	t)		\$ 3	(annually)
Annual Members .							10	(annually)
Sustaining Members							25	(annually)
Life Members							100	
Fellows							500	
Patrons							1,000	
Associate Benefactor	rs						10,000	
Associate Founders							25,000	ı
Benefactors							50,000	)

The Endowment Fund was established in 1884. The Trustees especially desire to insure the permanent growth and welfare of the Museum through an increase of this fund.

## FORM OF GIFT OR BEQUEST

I do hereby give and bequeath	to "THE AMERICAN
Museum of Natural History"	of the City of New
York,	







The Honorable Seth Low

Mayor of New York 1902–1903

Trustee of the American Museum of Natural History 1905–1916

## FORTY-EIGHTH ANNUAL REPORT

OF

# THE AMERICAN MUSEUM OF NATURAL HISTORY

FOR THE YEAR 1916

Annual Report of the President

Treasurer's Report
List of Members

Secretary's Report List of Accessions

Act of Incorporation

Contract with the Department of Parks

Constitution and By-Laws

Report of the Pension Board



NEW YORK
Issued May 1, 1917



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# BOARD OF TRUSTEES FOR 1917

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FOR 1917

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### Committee on Pensions

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Assistant Secretary
GEORGE H. SHERWOOD

Assistant Treasurer
UNITED STATES TRUST COMPANY OF NEW YORK

Bursar

FREDERICK H. SMYTH

Superintendent of Building

J. B. FOULKE

Chief of Construction

H. F. BEERS

Registrar

GEORGE N. PINDAR

Chief Engineer

H. J. LANGHAM

### SCIENTIFIC STAFF

FOR 1917

### DIRECTOR

Frederic A. Lucas, Sc.D.

# DEPARTMENT OF GEOLOGY AND INVERTEBRATE PALÆONTOLOGY

EDMUND OTIS HOVEY, Ph.D., Curator CHESTER A. REEDS, Ph.D., Assistant Curator

### DEPARTMENT OF MINERALOGY

L. P. GRATACAP, A.M., Curator GEORGE F. KUNZ, Ph.D., Honorary Curator of Gems

### DEPARTMENT OF WOODS AND FORESTRY

MARY CYNTHIA DICKERSON, B.S., Curator BARRINGTON MOORE, A.B., M.F., Associate Curator

### DEPARTMENT OF INVERTEBRATE ZOÖLOGY

Henry E. Crampton, Ph.D., Curator
Roy W. Miner, A.B., Associate Curator
Frank E. Lutz, Ph.D., Associate Curator
L. P. Gratacap, A.M., Curator of Mollusca
A. J. Mutchler, Assistant
Willard G. Van Name, Ph.D., Assistant
Frank E. Watson, B.S., Assistant
W. M. Wheeler, Ph.D., Hon. Curator of Social Insects
A. L. Treadwell, Ph.D., Hon. Curator of Annulata
Charles W. Leng, B.S., Hon. Curator of Coleoptera

### DEPARTMENT OF ICHTHYOLOGY AND HERPETOLOGY

Bashford Dean, Ph.D., Curator Emeritus John T. Nichols, A.B., Assistant Curator of Recent Fishes Mary Cynthia Dickerson, B.S., Associate Curator of Herpetology

### DEPARTMENT OF MAMMALOGY AND ORNITHOLOGY

J. A. Allen, Ph.D., Curator
Frank M. Chapman, Sc.D., Curator of Ornithology
Roy C. Andrews, A.M., Assistant Curator of Mammalogy
W. DeW. Miller, Assistant Curator of Ornithology
H. E. Anthony, B.S., Assistant in Mammalogy
Herbert Lang, Assistant in Mammalogy
James P. Chapin, A.B., Assistant in Ornithology

### SCIENTIFIC STAFF FOR 1917—Continued

### DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

HENRY FAIRFIELD OSBORN, Sc.D., LL.D., D.Sc., Curator Emeritus W. D. MATTHEW, Ph.D., Curator Walter Granger, Associate Curator of Fossil Mammals Barnum Brown, A.B., Associate Curator of Fossil Reptiles William K. Gregory, Ph.D., Associate in Palæontology Charles R. Eastman, Ph.D., Research Associate

#### DEPARTMENT OF ANTHROPOLOGY

CLARK WISSLER, Ph.D., Curator
PLINY E. GODDARD, Ph.D., Curator of Ethnology
ROBERT H. LOWIE, Ph.D., Associate Curator
HERBERT J. SPINDEN, Ph.D., Assistant Curator
N. C. Nelson, M.L., Assistant Curator
CHARLES W. MEAD, Assistant Curator
M. D. C. Crawford, Research Associate in Textiles
GEO. BIRD GRINNELL, Ph.D., Research Associate in Ethnology
J. H. McGregor, Ph.D., Research Associate in Physical Anthropology
LOUIS R. SULLIVAN, A.M., Assistant in Physical Anthropology
LESLIE SPIER, B.S., Assistant in Anthropology

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### DEPARTMENT OF PUBLIC HEALTH

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### DEPARTMENT OF PUBLIC EDUCATION

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#### DEPARTMENT OF BOOKS AND PUBLICATIONS

RALPH W. TOWER, Ph.D., Curator IDA RICHARDSON HOOD, A.B., Assistant Librarian

### FORTY-EIGHTH ANNUAL REPORT

To the Trustees and Members of The American Museum of Natural History, and to the Municipal Authorities of the City of New York:

The President has the honor to submit herewith his tenth annual report of the development of the American Museum—the forty-eighth year of the history of the institution. On April 6, 1919, the Museum will celebrate the fiftieth anniversary of its foundation, and it is hoped that this celebration may be marked by the opening of the two new buildings—the Southeast Wing and the Court of Ocean Life—which the Museum so urgently needs for the reception and exhibition of its overflowing collections.

Next to building in importance is the increase of our General Endowment Fund. Like all other growing institutions in this country, our needs for general purposes have Need of far outstripped the income derived from our Gen-General eral Endowment, which amounts at the present Endowment time to \$57,211. For several years it has been necessary for the Trustees and Members of the Museum to add amounts varying from \$60,000 to \$100,000 to operate the institution and to make up the deficiency in the maintenance allowance of the City. This is a generous method, but not a financially sound one, and the gift to the General Endowment of \$2,000,000 is greatly needed to insure permanently the development of the Museum before entering the second half century of its existence.

The need of immediately increasing the General Endowment is still further emphasized by the results of a careful study of the salaries of the Museum, which was made during the preparation of the budget for 1917. The statistics showed

that the schedule of salaries for the members of the scientific and administrative staffs is much below the standards recognized elsewhere in the city, and if the American Museum is to retain highly efficient men on its staff, it must pay salaries commensurate with those that similar services command outside. Relief in this situation can be obtained only through a larger General Endowment.

During the year a number of important bequests and gifts have been announced, which when received will be applied to the General Endowment.

Under the will of Amos F. Eno, an Annual Member for twenty-four years and a Life Member for ten years, the

Museum was designated as a beneficiary to the extent of \$250,000. This will was contested by certain of the heirs and was set aside by jury trial. The case is now pending before the Court of Appeals.

Under the will of James Gaunt, the Museum is to be a beneficiary of one half of his residuary estate after the death of his brother Dr. Thomas T. Gaunt. It is estimated that under this legacy the Museum may receive \$100,000.

Although the will of Charles E. Rhinelander is being contested, there is a possibility that the Museum will receive a bequest of \$8,000 and may later be a further beneficiary to the extent of \$12,000 from a trust fund.

The Museum has received \$10,000 as payment in full of the bequest of Emil C. Bondy. This sum has been added to the General Endowment Fund.

Under the will of Helen C. Juilliard, the Museum is to receive the sum of \$50,000, which will be applied to the Building Fund of the Museum.

If the Trustees and Members will observe the wonderful stimulus which has been given to the scientific and educational development of the Museum through the new resources coming from the Jesup Endowment Fund, they will feel more strongly than ever the urgency of the movement towards increased building space and increased General Endowment. The annual income from this

fund is \$252,500, all of which, according to Mr. Jesup's wise intention, must be devoted to exploration, research, scientific discovery and publication, as well as to scientific exhibition.

Among the pleasant surprises of the year was a gift of \$10,000 from Mrs. Russell Sage, which has been added to the Special Endowment as the Margaret Olivia Sage Gift of Mrs. Fund. In view of the interest of Mrs. Sage in birds and their conservation, the income of this fund is set aside for the enrichment of the collection of birds.

The Trustees have positively decided that the Museum building must be enlarged. At the May meeting of the Board, the question was raised whether, in view of Need of Southeast Wing and Court of Ocean Life the Museum through personal donations.

On July 18, a conference was held between the President, Mayor Mitchel and Comptroller Prendergast, in which the Comptroller expressed the opinion that it would be impossible to make any appropriations of any kind for building during the remainder of the year 1916, and both officers expressed the opinion that the City would not regard the donation of a building as prejudicing or hindering municipal appropriations in the future. In order to make this agreement a matter of legal record, at Mayor Mitchel's suggestion the following resolution was adopted by the Board of Estimate and Apportionment on July 27:

Whereas, The Trustees and friends of the American Museum of Natural History, through very large donations, have greatly increased the collections and have strengthened the relations between the Museum and the public schools, the members of the Board of Estimate and Apportionment desire to make public acknowledgment of the service which the Museum has rendered and is rendering to the City; and

Whereas, Ten years have elapsed since the City has added to the building of the American Museum of Natu-

ral History, and the members of the Board of Estimate and Apportionment appreciate the urgent necessity of enlargement of the building, they realize that it is impracticable for the City to make any appropriation this year for the Museum because of the very heavy obligations to which the City is committed for other important purposes.

The members of this Board, however, are fully alive to the binding nature of the agreement between the Museum and the City, namely, that the City shall continue to add building space as the collections and exhibitions increase, according to the Contract of 1878, and trust that the opportunity may soon come when building by the City may be renewed. In view of this emergency, the Board desires to make record that if private funds are contributed for the erection of the building the acceptance of such donation shall not be regarded as a precedent to relieve the City of its obligation to continue the extension of the building in the future.

This action of the Board of Estimate removed the serious objection to the raising of a building fund by subscription. The first contribution to the Museum building fund was a check for \$100,000 from Dr. James Douglas, which was followed by other generous subscriptions from members of the Board of Trustees, amounting, at the time of the Annual Meeting of 1917, to \$617,000.

To build and equip the Southeast Wing and Court of Ocean Life at the present time, the sum of \$1,000,000 is required; consequently there is still an amount of \$400,000 to be contributed. Full acknowledgment of the individual donations will be made when the subscription is complete.

The Court of Ocean Life is being designed as the most complete and beautiful museum unit in the world.

Contents of the Proposed New Buildings

Oceanographic Museum at Monaco and the Fisheries Museum at Berlin. Besides the small forms and phenomena of

ocean life, it is planned to exhibit the George S. Bowdoin collection of whales and other cetaceans, including the twenty-seven models and eight skeletons of whales now on exhibition and the much larger number of models and material now in storage, assembled from the expeditions extending from Long Island Sound to Quebec, British Columbia, Alaska, Japan and Korea, made by Mr. Roy C. Andrews between the years 1907 and 1914, as well as other great collections from the Arctic and Antarctic Seas.

The first floor of the Southeast Wing will be occupied by the great Hall of Fishes, for the arrangement of which special designs are being prepared by Curator Bashford Dean and Director Frederic A. Lucas. Above this will be the Asiatic Hall, for which the Museum has assembled great collections and for which it now has a special expedition in the field in southern China and Tibet, under the direction of Mr. Roy C. Andrews. The third floor will be devoted to the Reptiles of the World. The fourth floor will be a Hall of Dinosaurs. including the great collections which have been made since explorations were begun in 1907 in the Rocky Mountains. The upper floors will be devoted to curators' offices, laboratories and storage space. These plans, as presented by Trowbridge and Livingston, architects, are fully set forth in the Fourth Edition of the Museum's folder, "Growth of the Building," published December 1, 1916.

The movement for the relief of the Museum in this crisis of its development, by the donation of buildings, has received very strong public and editorial support, especially in the Times, Sun, Tribune, World, American, Herald and Evening Post. The Special Committee of the Trustees, which has the matter in charge, includes Messrs. Cleveland H. Dodge, J. P. Morgan, A. D. Juilliard, Felix M. Warburg, and Henry Fairfield Osborn ex officio.

# COÖPERATION WITH OTHER NATIONAL INSTITUTIONS IN THE DIFFUSION OF SCIENCE

Since 1896, when Professor Franz Boas was simultaneously appointed to Columbia University and to the scientific staff of the American Museum, this institution has been coöperating with Columbia in anthropology, as a result of which Columbia has taken a leading place in the training of anthropologists in this country. Similar important results have been obtained through coöperation in vertebrate palæontology and zoölogy.

On another side, the Museum is now offering to coöperate with other great scientific institutions in the United States for the wider diffusion of science among the people.

There has probably never been a time in the history of our republic when the wide diffusion of a knowledge of the laws of nature among the people was more important and pressing than at present. To the pure science of zoölogy, geology and anthropology of its early days, the Museum is now adding many of the applications of science to public welfare in chemistry, mining, public health, eugenics and food supply, to meet the constantly increasing demand for knowledge on these subjects. To the dissemination of the ideas and great scientific discoveries of Linnæus, Darwin, Louis Agassiz, Leidy, Cope and Marsh, we are adding the practical influence of the discoveries of Pasteur and Ross in disease, of Sargent in forestry, of Galton and Mendel in heredity. In the Darwin Hall a child can learn the principles of racial improvement and eugenics, in a simple and beautiful manner.

The coöperation of the Museum has recently been tendered to the Trustees of the Carnegie Corporation\* in the form of a proposed arrangement whereby the Museum may translate to

<sup>\*</sup>The charter object of this corporation is "to promote the advancement and diffusion of knowledge and understanding among the people of the United States, by aiding technical schools, institutions of higher learning, libraries, scientific research, hero funds, useful publications, and by such other agencies and means as shall from time to time be found appropriate therefor." By Act of the Legislature on June 9, 1911.

the people the latest results of scientific research and discovery which are flowing from the men of genius enlisted in the various affiliated departments of the Carnegie Institution. During the year 1916, the Carnegie Institution expended the unprecedented sum of \$750,710 in pure research in astronomy, pure and applied chemistry, physics, geophysics, terrestrial magnetism, biology, zoölogy, palæontology and experimental evolution.

It has been suggested to the Trustees of the Carnegie Corporation that they should take into consideration the means which the American Museum now affords, and Carnegie which may develop through further building and Corporation equipment, for the wide diffusion among the people, and especially among the pupils and students of our educational institutions, of the results of the most recent scientific discoveries. For example, in the COURT OF OCEAN LIFE. in the adjoining Hall of Fishes and in the Hall of Biology (Darwin Hall), the discoveries which are being made in various parts of the world by the Carnegie Institution in these subjects could be translated into visual or graphic form and made to exert an influence, as is done by the remarkable Oceanographic Museum at Monaco and the Institut für Meereskunde at Berlin. Similarly in the proposed ROTUNDA OF ASTRONOMY, which forms the central feature of the Museum's new plan of building, approved by the Trustees in 1911, the most recent discoveries from the great astronomic observatories of America, especially the work of Hale at Mount Wilson, of Campbell at Mount Hamilton, of Pickering at Harvard, of Lowell at Flagstaff and of other American observers, could be presented visually.

To present the subject of astronomy properly, the central rotunda would cost about \$500,000, representing an annual interest and maintenance charge of approximately \$30,000. By this annual expenditure, the results of researches, which cost the Carnegie Institution alone more than \$219,000 annually, could in considerable measure be brought to the pupils of the schools, to the students of the universities and to the general public.

The Trustees of the Museum may also invite the cooperation of the Rockefeller Foundation in support of its purely educational propaganda in the Department of Public Rockefeller Health for a knowledge of the natural causes of Foundation health and disease. There is a widespread impression, which rests upon no adequate evidence, that the American people are relatively well informed in matters of science. As a matter of fact, inquiry would show that we are far behind the people of Scandinavia, of Denmark, of Holland and especially of Germany in all these subjects. In our judgment, the Museum on the Jesup foundation should prepare itself to cooperate so far as possible with the great institutions which have been founded for public enlightenment by men like Andrew Carnegie and John D. Rockefeller in the more rapid diffusion of science, each institution taking the particular share which it is best fitted to undertake. The Carnegie Institution is preëminently devoted to pure research; the Rockefeller Foundation is at present devoted largely to the practical application of medical discovery, while the American Museum is devoted primarily to visual education in all departments of natural science, including the subjects which have more recently come within its domain.

As regards what is now being accomplished in the diffusion of knowledge, the statistics of the Department of Public Education, showing the number of institutions of different grades now reached by our plan of coöperation, are very impressive:

# INSTITUTIONS MAKING USE OF THE MUSEUM COLLECTIONS AND EXHIBITIONS

Public Schools	440
Parochial Schools	8
Private Schools	51
Colleges and Universities	167
Medical Schools	114
Schools of Art and Design	8
Libraries	14
Other Educational Organizations and Institutions	148
Total	950

The various means by which this diffusion is carried on, by class work in the Museum, by laboratory work in the schools furnished with Museum material, by lectures Present System in the Museum and in local lecture centers, by of Diffusion advanced observation courses in the Museum exhibition halls, and by the free use of our collection of 20.000 lantern slides, are clearly set forth in the report of the Department of Public Education. Through the nature study collections, 1.118,000 school children have been reached; nearly 40,000 lantern slides have been in circulation in the schools. and more than 80,000 pupils have attended our lectures within and without the Museum. Through this extension work the scientific results of expeditions and researches are promptly translated to the schools. Presented in another way, there has been a very marked increase in the practical use of the Museum by visiting classes in both science and art and for purposes of technical design. The very slight falling off in total attendance in connection with our educational system is due to the epidemic among the children and also to the withdrawal of nature study courses in certain of the schools.

# STATISTICS OF NUMBERS REACHED BY THE MUSEUM AND ITS EXTENSION EDUCATIONAL SYSTEM

	1912	1913	1914	1915	1916
Board of Education Lectures Lectures to School Children and Classes visiting the Mu-	52,855	48,119	52,761	41,970	34,421
seum for Study  Meetings of Scientific Societies and Other Meetings	49,872	56,899	65,785*	61,437	58,842
and Lectures	28,384	33,357	32,939	22,542	28,495
Total	131,111	138,375	151,485	125,949	121,758
Halls	715,852	728,288	657,458	794,139	725,917
Total Attendance for all Purposes  Lectures to Pupils in Local	846,963	866,663	808,943	920,088	847,675
Centers				32,800	37,400
Numbers reached by Circulating Collections	1,275,890	1,378,599	1,273,853	1,238,581	1,118,322
Grand Total	2,122,853	2,245,262	2,082,796	2,191,469	2,003,397

<sup>\*</sup> Includes pupils, estimated at 15,000, attending lectures in the Local Centers.

### EXPANSION OF EXPLORATION AND RESEARCH

The reception of the larger part of the income from the Jesup Endowment Fund of \$6,000,000, namely, of \$202,050 during the past year, has been followed, as Mr. Jesup intended it should be, by a very marked expansion of our exploration in the Arctic region, in North America, in South America and in Asia. For the time, exploration in Africa has given way to the arrangement of our great collections. The following analysis of the total expenditures in the various branches of natural science will show the world-wide extent of the Museum's activities:

#### CLASSIFIED EXPENDITURES

For Exploration and	Research	h:
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•					
	For Collections	For Exploration	For Research	Total	
Geology and Geography (Greenland, North Ameri Antilles)		\$26,060,20	\$E 607.72	\$22,862.04	
Vertebrate Palæontology	Ψ2,093.93	φ20,009.39	ψ3,09/./~	ψ33,003.04	
(North America, Antilles)	2,937.64	10,218.54	13,295.04	26,451.22	
Entomology and Lower Invertebrates (North America, An-					
tilles, Africa)	802.72	2,027.73	9,743.96	12,574.41	
Ichthyology and Herpetolog (North America, South America, Antilles, Asia,					
Africa)	260.75	3,181.08	8,555.87	11,997.70	
Mammalogy and Ornitholog (North America, South America, Asia, Africa)	ĺ	22,111.55	12 286 47	37.080.30	
Forestry (Botany)	-	~~,	13,300.47	37,000.30	
(North America)	353.50	8.95	660.60	1,029.05	
Physiology and Public Health			2,247.66	2,247.66	
Anthropology (Ethnology and Archæology) (North America, South			,		
America, Antilles)		15,352.02	10,627.10	31,166.18	
Library (Scientific Reference					
Books)	7,484.31		12,775.99	20,260.35	\$176,669.91
For Diffusion of Result	ts of Exp	loration a	nd Resea	rch:	
Preparation of Study and Installation and Exhibition Publications (Popular and Public Education	Exhibition of Collect	Collections		\$83,237.09	
(Museum Extension to S	chools and	Lectures)	••••••	14,295.72	168,484.76
Total Expenditures in	Exploration	n, Research	and Educ	ation	\$345,154.67

In view of the generous contributions by the Trustees, Members and the Jesup Fund to the Congo Expedition during the years 1909–1915, and of the ardent field work by Messrs. Herbert Lang and James P. Chapin, it is a pleasure to report that the results of this expedition far exceed our most sanguine expectations in every branch of natural history as well as in anthropology. The statistics of the collection are as follows:

# Zoölogical Specimens:

Mammals  Birds  Reptiles and Batrachians  Fishes	5,800 6,241 4,800 5,400
Invertebrates  Total  Ethnographical and Anthropological Objects	132,241
Photographs—Anthropology and Zoölogy (40 Albums)	3,800 9,500

These collections have been distributed to specialists in various parts of the United States and in Great Britain for scientific description. In the Museum, the principal studies are under the direction of Curator Allen, and the specimens are being worked up by the two leaders of the expedition, Messrs. Herbert Lang and James P. Chapin, by Dr. Joseph Bequaert and by Mr. John T. Nichols.

The insects and the birds are in especially perfect condition. The collection of mammal skins was greatly enriched by gifts from the officials in the Belgian Congo, all of whom aided the expedition in the most cordial way. The entire collection of skins has been permanently prepared, and some of the choicest specimens, such as the white rhinoceroses and the okapi, are being superbly mounted in the atelier of Mr. Carl E. Akeley, with the cooperation of Mr. James L. Clark.

The most important publication in progress is a two-volume narrative of the Congo Expedition, to be written by Messrs. Lang and Chapin in conjunction with various specialists. All together the Congo Expedition promises to be the most important single undertaking in the history of the Museum.

The attention of the Trustees and Members is directed especially to the report of the Curator of Anthropology (page 84).

Discovery and Research in Anthropology

During the past ten years the Museum has expended on the subject of anthropology alone nearly \$500,000, derived

partly from the Jesup Fund and partly from generous contributions from Mr. Archer M. Huntington and others. During this time more than 300,000 specimens have been added, of a value estimated to be considerably beyond the actual cost of collection.

As planned by Curator Wissler, who in 1907 succeeded the anthropologists Professor Franz Boas and Professor Frederic W. Putnam as Curator, the anthropological work of the Museum is pursuing definite lines of research in all parts of North America, with two objects in view:

First, to secure a knowledge of the language, customs, religion and mythology of the primitive peoples of America before the last traditions of their original life have been entirely eliminated by the advancing system of American education. This great undertaking, which supplements the work of the Bureau of Ethnology, has been carried on through the able field work of Curators Clark Wissler, Pliny E. Goddard and Robert H. Lowie.

The second, historic and prehistoric, division of work extends principally into the Southwest, Mexico, Central and South America, and is designed to establish the chronology and date the monuments of this great region through the very careful study of economic and architectural cultures. To this division have been especially assigned Dr. Herbert J. Spinden for Mexico and Central and South America, and Mr. N. C. Nelson and Mr. Leslie Spier for the pueblos and cliff dwellings of the southwestern United States. This work is supported chiefly through the Huntington Fund, known as the Anthropology of the Southwest Fund. It is most gratifying to report that at last a secure basis for chronology has been established, through the exact exploration of ancient sites of the kind which has so long been practised by the archæological investigators in France. This is chiefly the work of Mr. N. C.

Nelson, who spent some time in France acquiring the latest European methods.

In our Museum halls may be found the visible results of this archæological exploration. First, there is a renewed examination of the Pueblo Bonito of northern New Mexico, which was explored chiefly through the generosity of Messrs. F. E. and B. T. B. Hyde during the years 1895 to 1903. Second, there is the revelation of the still more important ancient pueblo site near the town of Aztec, New Mexico; the first year's excavation at Aztec shows that this promises to be one of the most important, if not the most important, ancient site which has been discovered in the Southwest.

It is expected that as a result of these prolonged intensive studies the chronology of the entire southwestern United States will be connected with that of Mexico and Central America, which has been firmly established by the researches of Dr. Herbert J. Spinden of our staff.

The anthropological exhibitions have been made far more attractive to the people through the rearrangement of the exhibition halls, and through the interpretation of the ancient life of the peoples by the admirable mural paintings of Mr. W. S. Taylor and by the group work of Messrs. Howard McCormick and Mahonri M. Young.

The Museum has continued its three great lines of exploration in South America:

First, the Roosevelt Expedition has continued its exploration, under Mr. George K. Cherrie, in the pantanales of upper Paraguay and Brazil. Mr. Cherrie devoted the greater part of his time to securing notes on the life histories of birds and mammals, rather than to making large collections of specimens.

Second, the survey of the Andean region, under the direction of Dr. Frank M. Chapman, begun in Colombia six years ago, has been continued by Messrs. Leo E. Miller and Howarth S. Boyle, who made an extended tour through Colombia, Bolivia, Peru, Argentina and Brazil. Dr. Chapman visited Ecuador, Bolivia, Peru, Chile, Argentina and Brazil in the spring

of 1916, making a general reconnaissance. The bird collections are the first ever made in these zoölogical regions in which complete data concerning the environment and life habits have been secured, and the scientific results of the work accomplished in Colombia are being collected in the first volume of Dr. Chapman's reports, entitled "Distribution of Bird Life in Colombia," constituting Volume XXXVI of the Museum Bulletin, 1917. Not the least important feature of these expeditions from the Pan-American standpoint is the very friendly relations which our representatives, especially Dr. Chapman, have established with the officers and scientific men of the various South American governments.

Third, Messrs. Clarence R. Halter and L. A. Mannhardt have been engaged in a biological survey of Nicaragua, especially for the purpose of making collections of reptiles and fishes.

In the meantime the Brewster-Sanford Expedition, under the direction of Mr. Rollo H. Beck, which had for its object the collection of all the oceanic birds of South America, has completed a tour of the coasts and of the outlying islands, as a result of four years' continuous and indefatigable exploration on the part of Mr. Beck. The collection is being made for complete scientific description and record. Mr. Beck is now working in San Domingo of the Antilles.

African exploration has been suspended, and the first steps toward the collection of material for the Hall of Asiatic Life are being taken in the expedition to the mountains Exploration of eastern and southwestern China, headed by Mr. in Asia Roy C. Andrews, accompanied by Mrs. Andrews and Mr. Edmund Heller, who was formerly attached to the Roosevelt African expedition. In spite of the revolution in China, the party has met with phenomenal success, having secured nearly 2,000 birds and mammals, including materials for groups of the rare Asiatic members of the chamois family, known as the goral and serow. Among the contributors to this important expedition are Mr. and Mrs. Charles L. Bernheimer, Mr. and Mrs. Sidney M. Colgate, Mr. James B. Ford, Mrs. Adrian Hoffman Joline, Mr. Henry C. Frick, Mr. Childs





DEPARTMENT OF MINERALOGY JADE FROM SILESIA, GERMANY

This mass of jade from the Heber R. Bishop Collection is the largest ever mined

Frick, Mr. George Temple Bowdoin and Mr. Lincoln Ellsworth.

Instituted by the New York Academy of Sciences three years ago, under a plan formulated by Dr. Nathaniel L. Britton, Director of the New York Botanical Garden, is Antillean the biological survey of Porto Rico conducted by Exploration specialists from the Garden, the American Museum and Columbia University, in botany, geology, anthropology and terrestrial and marine zoölogy. With the aid of the Government of Porto Rico, this complete natural history survev of one of the most important island possessions of the United States promises to be of great civilizing and economic as well as scientific value. Under Curator Crampton this survey has been extended to the neighboring Antillean islands, with a view to throwing light upon the whole Antillean problem, namely, of the geologic antiquity of these islands and of their former relations with Central and South America. Already important discoveries have been made in vertebrate palæontology, through work upon the fossils of the Porto Rican caves, which have thrown new light on the migrations from South America.

Attention may be directed not only to the general matters herein described by the President, but to the full and important reports of the Director and of the Curators of the various scientific and educational departments.

Although special mention cannot be made this year of each of the scientific departments, attention is called to the entire rearrangement of the geological hall, under Assistant Curator Reeds (page 58); to the completion of the rearrangement of the Hall of Shells, under Curator Gratacap (page 66); to the important work in the Department of Insects, under Associate Curator Lutz (page 68); to the wide distribution of the bacteriological collections throughout the United States, under Curator Winslow (page 91), and finally to the progress of research in the Department of Fishes, under Curator Bashford Dean (page 70).

A small but increasing number of specialists are associating themselves with the scientific work of the Museum as volunteers, that is, without salary but with the honorary title of Research Associate awarded by the Trus-Associates Among the first to be appointed was Dr. George Bird Grinnell, who is an authority on American ethnology, especially on the habits and customs of the Blackfoot Indians. In the anthropological department are also Dr. J. Howard McGregor of Columbia University, who has made important contributions to the reconstruction of racial types of the Palæólithic Age, and Mr. M. D. C. Crawford, an expert in textiles, who has rendered distinct service to the Museum by his researches on the textiles and designs of Peru and in stimulating among the manufacturers the use of prehistoric American art in the preparation of designs. This has created a new and profitable industry. Another appointment was that of Dr. Charles R. Eastman of Harvard University, who is associated with Professor W. K. Gregory of Columbia University, also of our scientific staff, in the preparation of a treatise on vertebrate palæontology. The last appointment to this rank is that of Mr. Alessandro Fabbri as Research Associate in Physiology, who is carrying on experiments in the microphotography of minute forms of organic life, in connection with the Department of Physiology, which promise to be of great scientific as well as of educational value. Mr. Fabbri plans to extend his work to the minute organisms of the sea.

# BUILDING AND EQUIPMENT

In December, 1915, the Board of Estimate and Apportionment rescinded the inactive balance of the construction fund

(CDP 3C) and reappropriated it as a case construction and equipment fund (CDP 3E). It was estimated that this sum would be sufficient to provide for the normal equipment needs for about three years. Accordingly the Board of Estimate and Apportionment was requested to release \$35,580.43 of this fund for case construction and equipment work for 1916. Through this

appropriation it has been possible to provide a number of storage and exhibition cases which were essential not only for the preservation of valuable collections but to make them accessible to the public. A further release of this fund, amounting to \$32,450.55, has been granted, which will permit the continuation of equipment work during 1917.

It is now almost 40 years since the first section of the Museum was erected, while the newest wing is nearly 10 years old. It is not surprising, therefore, that the roof, steam and water pipes and other parts of the physical equipment show marked signs of deterioration and must be replaced. As the City's usual appropriation for maintenance is insufficient for current needs, a special appropriation of \$25,000 was requested in 1916 to provide for these extraordinary repairs. The City finally granted an appropriation of \$15,657 for this purpose.

The repairs completed during the year, as given in the Director's report, give evidence of the wisdom of this appropriation. For 1917 the City has provided a special appropriation of \$12,700 for the continuation of these necessary repairs.

### MEMBERSHIP AND STAFF

It is with a deep sense of personal loss that we record the death of our fellow Trustee, the Honorable Seth Low, which occurred on September 17, 1916. Mr. Low had been a member of the Board since May 5, 1905, and had rendered many and important services to the Museum. The following resolution was adopted by the Trustees at a meeting held on November 20, 1916:

In the death of Seth Low, the American Museum has lost one of the most distinguished of the many public spirited and large minded citizens who have served the interests of the institution during the past half century. Mr. Low's name followed that of Abram S. Hewitt as a former Mayor of the City who gave of his valuable time and experience to the upbuilding of our great institution.

As President of Columbia University in 1901, he was

the first great educator to recognize that the University should not duplicate the work of the Museum, but should send its students here for their advanced practical studies and researches. This union has led to the training of many men who are fast becoming eminent in several fields of natural history.

He first served the Museum on the East Asiatic Committee, with Messrs. Hill, Harriman, Dodge and Schiff. Elected a Trustee May 5, 1905, he served on the Nominating Committee, the Jesup Memorial Committee, the Executive Committee, the Committee on the Museum for the Blind, the Committee on Investigation of Museum Administration, and the Auditing Committee. To each he gave of his valuable time and rare judgment in public affairs.

During the eleven years of his life as Trustee, he never hesitated when opportunity offered to show his intense interest in the public welfare and his faith in the great public educational work which the Museum is undertaking.

We shall miss his genial presence at our councils, and gather new spirit and strength from his splendid example as an American citizen.

At the Annual Meeting in February, Mr. Henry P. Davison was elected a member of the Board to fill the vacancy due to the death of Dr. Daniel Giraud Elliot. Owing to ill health, Mr. Charles Lanier tendered his resignation as Treasurer, after a continuous service of twenty-five years. Mr. Henry P. Davison was elected to succeed him. Later in the year, Mr. J. P. Morgan resigned from the Finance Committee, and Mr. Davison was elected Chairman of the Finance Committee.

On February 8, Dr. J. Howard McGregor was appointed Research Associate in Physical Anthropology.

On June 1, Dr. T. G. Hull was appointed Assistant in the Department of Public Health.

On June 1, Mr. Louis R. Sullivan was appointed Assistant in Physical Anthropology.

On June 1, Mr. Leslie Spier was appointed Assistant in the Department of Anthropology.

Mr. Alanson B. Skinner resigned as Assistant Curator in the Department of Anthropology in January.

Mr. Daniel M. Fisk resigned as Assistant in the Department of Invertebrate Zoölogy in August.

Dr. Israel J. Kligler resigned as Assistant in the Department of Public Health in October.

Dr. Louis Hussakof resigned as Curator of Ichthyology in December.

### PUBLIC ACTIVITIES OF THE STAFF

In April, Professor Osborn delivered two lectures before the National Academy of Sciences in Washington on "The Origin and Evolution of Life on the Earth." This was the fourth course of the Hale lectures, the foundation of which was a gift to the National Academy by the children of William Ellery Hale in memory of their father.

Director Lucas addressed the Chicago Academy of Sciences on "Service of the Museum to the Public."

Dr. William K. Gregory has been promoted by the Trustees of Columbia to the rank of Assistant Professor of Vertebrate Palæontology and has been assigned a seat in the Faculty of Pure Science.

Mr. R. W. Miner and Dr. G. Clyde Fisher represented the Museum at the Washington Meeting of the American Association of Museums.

Dr. H. E. Crampton represented the Museum at the Memorial Meeting to John W. Alexander, which was held in the Vanderbilt Gallery of the Fine Arts Building on May 28.

At the meetings of the Science Teachers Association, held at Syracuse in December, Miss Ann E. Thomas represented the Museum and read a paper on "The Museum as an Aid in the Teaching of Science."

### WELFARE OF EMPLOYEES

The comprehensive Pension Plan which was put in operation four years ago is working successfully. This plan is based on a 3% contribution by the employees and a 3% contribution by the Trustees, and its administration is vested in a Pension Board composed of four Trustees and three employees. There are now 241 employees who participate in this fund, and one employee is receiving a pension. The endowment is \$60,000.

The interests of the employees have been still further guarded by the requirement of a physical examination of employees before they are accepted by the Pension Board. The cost of this physical examination is borne by the Museum.

The Fourth Annual Report of the Pension Board will be found on pages 215 to 235 inclusive.

In view of the increased demands upon the various officers and employees of the Museum and the increased cost of living, the Trustees voted a special grant to all the officers and employees, equivalent to 10% of the salaries paid during the year 1916. This included a total of 312 employees, and the total sum distributed was \$32,316.15, of which \$23,500 was raised by subscriptions of Trustees and \$8,816.15 was borne by the Jesup Fund.

### HOSPITALITY TO SOCIETIES

As for many years past, the Museum has extended hospitality to educational and scientific societies, providing rooms for meetings and lectures. The regular meetings of the New York Academy of Sciences were held here, also the annual meeting of the American Science and Historic Preservation Society; delegates to the second Pan-American Scientific Congress were tendered a reception on January 13; the Junior Auxiliary of the New York Zoölogical Society held a meeting on March 30, at which Mr. Raymond L. Ditmars presented a lecture and motion pictures; members of the Science Department of the National Education Association were given a luncheon on Friday afternoon, July 7, and were presented with copies of the "Teachers' Handbook to the Exhibitions and

Collections in The American Museum of Natural History: Part I, The North American Indian Collections, Their Use in Elementary English, History and Geography and in High School History and Economics."

The most important event of the year was the entertainment of the members of the American Association for the Advancement of Science and Affiliated Societies from December 26 to 30. President Osborn, as Chairman of the Local Committee. appointed the following as members of the Honorary Reception Committee of the City of New York, in connection with the meetings: His Honor John Purroy Mitchel, Elmer Ellsworth Brown, Nicholas Murray Butler, Andrew Carnegie, Joseph H. Choate, R. Fulton Cutting, Cleveland H. Dodge, Henry C. Frick, James B. Ford, A. Barton Hepburn, George G. Heye, Archer M. Huntington, Walter B. James, V. Everit Macv. Emerson McMillin, Sidney Edward Mezes, Mrs. Henry Fairfield Osborn, M. I. Pupin, Theodore Roosevelt, Mrs. Willard D. Straight, Mrs. Frederick Ferris Thompson, Frederic C. Walcott and Henry Fairfield Osborn. A general reception was given on Tuesday evening, December 26, and copies of the "Guide to the Nature Treasures of New York City" were given to the guests. At the meetings many important scientific papers were presented. A special exhibition of "Chemical Preparedness" was arranged on the fourth floor by the New York Sections of the American Chemical Society, the American Electrochemical Society and the Society of Chemical Industry and by the Museums of the Peaceful Arts. A special exhibit illustrating the life and work of Louis Pasteur was also arranged for the meetings.

Several special exhibitions have been held in the West Assembly Hall during the year: Paintings of arctic and antarctic scenes by F. W. Stokes; water colors of birds by H. Special Exhibitions

C. Denşlow; paintings of Alaskan scenery by Robert Van Vorst Sewell; paintings of Alaskan scenery by Leonard M. Davis; under-water landscapes of the coral lagoons of Tahiti and of the west coast of Scotland and mountain and desert scenes of California and Washington by Zarh H. Pritchard; paintings of India by the late André Champol-

lion; and models and paintings of modern animals and a mural decoration of prehistoric animals by Charles R. Knight.

Among the societies and organizations that held meetings in the Museum were:

American Anthropological Association

American Association for the Advancement of Science

American Association of Economic Entomologists, Section of Apiary Inspection

American Association of Official Horticultural Inspectors

American Bison Society

American Chemical Society, New York Section

American Electrochemical Society, New York Section

American Ethnological Society

American Folk-Lore Society

American Peony Society

American Safety League

American Scenic and Historic Preservation Society

American Society of Ichthyologists and Herpetologists

Aquarium Society

Brooklyn Entomological Society

Bureau of Laboratories, City Department of Health

Columbia University, for Classes and Biennial Jesup Lectures

Delegates to the Second Pan-American Scientific Congress

Department of Education, New York City, Free Public Lecture Courses

Entomological Society of America

Horticultural Society of New York

Inkowa Club

Junior Auxiliary of the New York Zoölogical Society

Keramic Society of Greater New York

Linnæan Society of New York

Museums of the Peaceful Arts

National Association of Audubon Societies

National Education Association

Natural Science Committee of the Associate Alumnæ of the Normal College

New York Academy of Sciences

New York Entomological Society

New York Microscopical Society

New York Mineralogical Club

Palæontological Society, Vertebrate Section

Society of American Bacteriologists

Society of Chemical Industry, New York Section

Torrey Botanical Club

Tree Planting Association of New York City

## GIFTS AND SPECIAL COURTESIES

The progress of the Museum in various parts of the world is due largely to the numberless courtesies received through the State Department at Washington, through officers of the various South American governments and of the British dependencies, and through facilities rendered by various transportation companies. These have been so numerous and of such a generous character that it is difficult to make acknowledgment in detail.

We are grateful to the many friends who have enriched the Museum's collections by gifts during the past year, and formal acknowledgment is made in the List of Accessions appended to this report.

The cost of transportation is a very important item in any expedition, and the exploratory work of the Museum has been especially facilitated by the practical assistance rendered by the following transportation companies and individuals:

The United Fruit Company, through Mr. Minor C. Keith, granted to four of our expeditions special privileges and reduced transportation rates to South and Central America and the West Indies.

The Guayaquil and Quito Railway Company, through its President, Mr. E. H. Norton, and its General Manager, Mr. F. R. Blunt, provided special transportation facilities for Dr. Chapman and the members of his party during exploration in Ecuador.

The Museum is indebted to the Panama Agent of the United Fruit Company for facilitating the shipment of the Colombian collections of Messrs. Miller and Boyle to New York.

The Ferro-Carril Boliviano, through its General Manager, Mr. R. L. Blaisdell, was especially helpful, not only in providing free transportation of equipment for Messrs. Miller and Boyle, but also in furnishing living quarters, guides and helpers for their field work. Later free transportation was granted for Mr. Cherrie and his equipment.

The Panama Rail Road Company, through Mr. C. H. Motsett, provided free transportation for the equipment used in the Bolivian Expedition of Messrs. Miller and Boyle.

Messrs. Barber and Company transported free of charge the equipment for the Roosevelt expeditions of Messrs. Cherrie and Miller from New York to Buenos Aires and made no charge for bringing the collections from Buenos Aires to New York.

We take pleasure in acknowledging the courtesies extended to Mr. Cherrie, while collecting in Puerto Pinasco and vicinity, Paraguay, by the New York and Paraguay Company, through Mr. W. A. Wheeler, General Manager, and his associate, Mr. Frank Burr.

Mr. Cherrie's work was further facilitated by the generosity of the Brazil Land, Cattle and Packing Company, at Descalvados, through Mr. J. G. Ramsay, the Superintendent of the Company, who placed horses, guides and helpers at Mr. Cherrie's disposal.

We desire to make acknowledgment to Mr. H. V. Meyer-heim, American Consul at Medellin, Colombia, who extended special courtesies to Mr. Miller.

We wish to acknowledge the courtesy extended to Dr. Spinden by the American Molasses Company in providing free transportation for archæological collections from Porto Rico to New York.

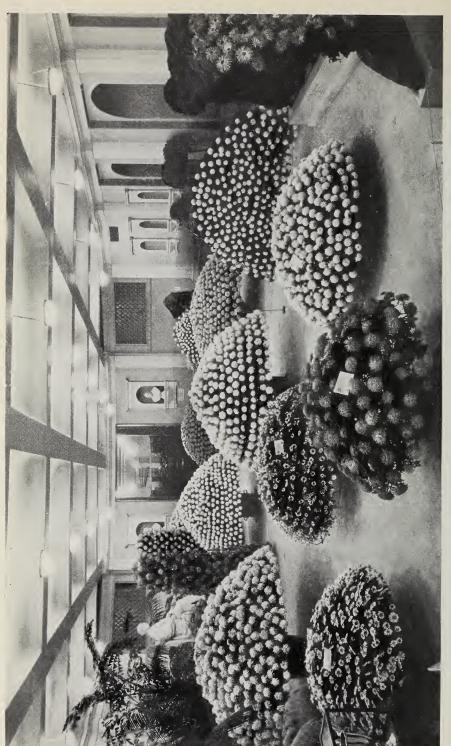
The Erie Railroad Company has been very helpful in tracing lost shipments.

The Trinidad Shipping and Trading Company transported free of charge preparation material for the work of Mr. C. William Beebe and of Dr. J. A. Samuels in British Guiana.

In connection with the expedition to Nicaragua, under Messrs. Halter and Mannhardt, the Bluefields Fruit and Steamship Company gave reduced rates from New Orleans to Bluefields, and the Fruit Dispatch Company, through Mr. Charles Weinberger, gave very material assistance.

Mr. Harry R. Caldwell and Professor C. R. Kellogg, residents of China, materially assisted Mr. Andrews in the work of the Asiatic Zoölogical Expedition.





SPECIAL EXHIBITION OF CHRYSANTHEMUMS

The annual exhibition of the Horticultural Society of New York was held in the Museum from November ninth to twelfth. The total attendance for these days was 201,465

### I. GENERAL ADMINISTRATION

FREDERIC A. LUCAS, Director

While the ever-increasing congestion, caused by the failure to erect new buildings, is felt in both the exhibition halls and the study series, the delay has not been without some small compensation, as it has permitted or compelled special attention being given to the rearrangement and labeling of collections already on exhibition. The great drawback of lack of room is felt most seriously in the exhibits of mammals, reptiles and fishes: for example, there is absolutely no provision at present for the mammals of Asia and Europe; the systematic series of fishes is in the Hall of Birds, and the reptile groups are installed in rooms whence they must ultimately be moved at the expenditure of much time and trouble.

The need for storage room is felt everywhere, but especially in the departments of mammals, birds and insects.

There has been again a steady increase in the use made of the Museum and its collections by classes and students from schools and colleges, from kindergarten to university, the exhibits being studied from the viewpoints of art, science, hygiene and technology. Aside from these the Museum has been used by or has furnished information for sculptors, painters and designers of textiles; writers and illustrators of books, magazine and newspaper articles; actors and producers of motion pictures; manufacturers of toys and buttons, and by farmers, gardeners, foresters and housekeepers in search of remedies for various "pests."

The most accurate record of the attendance of students is probably that kept in the Darwin Hall, and this shows that during the year the collections in that one room have been used by 273 classes, comprising 11,442 pupils and representing 122 institutions. This is an increase of 4,775 students over 1914. Among those making regular use of the exhibits in the Darwin Hall are Columbia University, Barnard College, the College of the City of New York, Hunter College, the Long Island

Medical College and the Morris, DeWitt Clinton and Evander Childs High Schools.

The use of the Indian and Peruvian collections by students of textile design has been noted at length in the reports of the Department of Anthropology, and Mr. Crawford is to be congratulated on the far-reaching results of his interest and enthusiasm. Aside from these special classes it is estimated that the monthly attendance of pupils under direct supervision of teachers is about 350, and there are besides ten university students in anthropology.

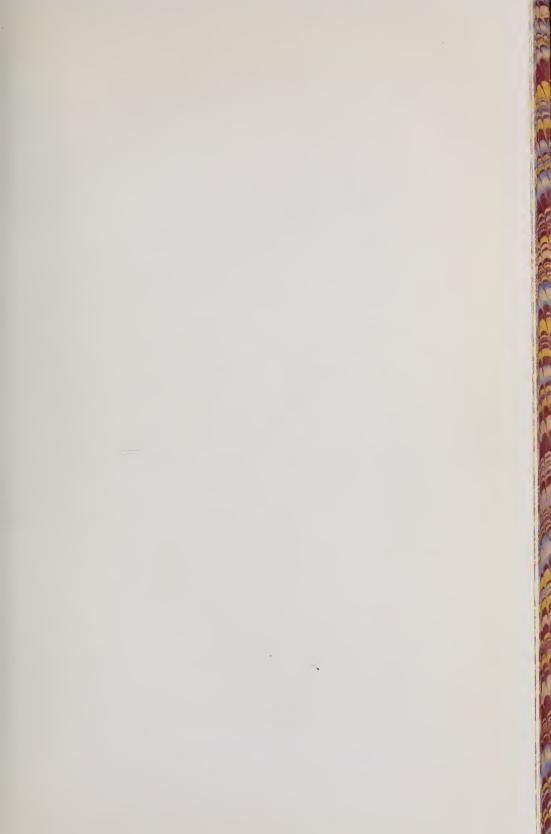
The minerals are used by classes and by collectors for the identification of specimens; the mammals are extensively copied by classes in drawing and the butterflies by pupils in water color; while the birds, both single specimens and groups, are in demand for purposes of illustration and the preparation of educational lantern slides.

There have been and occasionally are still queries as to whether a museum serves any useful purpose: if getting an education or making a living is a useful purpose, it would seem that these queries are answered in the affirmative.

The demand for "popular" publications continues good, the General Guide as usual leading, with a sale of 3,392 copies. The profitable issue of the Guide is hampered by the fact that, owing to additions to and changes in the collections, it is not possible, in justice to visitors, to print an edition of more than 5,000 copies. For example, during 1917 in all probability there will be placed on exhibition the Apache, Virginia Deer, Florida Reptiles, Red African Monkey and Nahant Tide Pool Groups, to say nothing of noteworthy single objects, all of which call for notice in a Guide.

In addition to the *Guide*, there were sold 2,516 *Leaflets*, 1,142 *Handbooks*, and 1,155 reprints of articles from the *Journal*, the total sales of all publications for the last five years being 38,418. Post-cards are still in demand, and 853 sets of fifteen and 12,214 sets of three were sold in 1916, a total of 49,437 cards, or more than in any previous year.

It is rather interesting that such leaflets as "A First Chapter in Natural History," "The Geology and Fauna of the Hudson





DEPARTMENT OF MAMMALOGY

AFRICAN CHIEF, MANZIGA

One of the figures illustrating the races of mankind in the Hall of Primates

River Region" and "Heredity and Sex" are among the "best sellers," for the first two of these are small and not illustrated and the last deals with a rather abstruse subject: evidently there is a desire for real information on the part of some of our visitors.

An addition to the publications that should be in demand is the series of one hundred poster stamps prepared under the direction of Mr. Pindar, who has made time to do this work in addition to his ever-growing other official duties, and has also prepared a Guide to the Nature Treasures of New York City, advance copies of which were distributed during the meeting of the American Association for the Advancement of Science in December.

Work on various groups and important single specimens has been prosecuted vigorously during the year, though in a number of instances the results will not be visible New Exhibits until another season. Mountain Sheep, Jack Rabbits, Pack Rats and Brown Bats have been added to the North American Series and the Mountain Goat Group has been completed. A fine group of Colobus Monkeys, and three figures, a Norwegian, a Chinese and an African, mark, it is hoped, the beginning of the complete "making over" of the Primates Hall. The figures, by the Washington sculptor Mr. U. S. J. Dunbar, are typical examples of the three better defined races of mankind and carry the exhibits of Primates beyond the point where they usually stop; for, while text-books agree that man is a member of the order, yet his display from a zoölogical standpoint is left usually to the anthropologist, who quite as usually omits to treat him zoölogically.

Weyer's Cave is practically finished and was placed on exhibition during the meeting of the American Association for the Advancement of Science; "Virginia Deer in Summer" and "Red African Monkeys" are well advanced, and so is the Florida Reptile Group, the largest "habitat group" that the Museum has ever undertaken; the Apache Group is three-fifths done, and studies have been made for the Navajo and New Zealand Anthropological Groups, which it is hoped may be commenced during the coming year.

The printing office, under Miss Clara M. Beale and Mr. Stephen Klassen, has turned out, as usual, a large and varied amount of work, ranging from single labels to pamphlets, and including 29,000 color plates and "inserts" for the Journal, requiring 89,500 impressions, and 1,500 color plates for the Habitat Groups Leaflet, calling for 6,000 impressions. Besides the numerous small booklets needed for lecture work, 1,500 copies of the first part of a Teachers' Handbook, comprising 48 pages and cover, were also printed in the Museum. Aside from these, the printing for 1916 may be summarized as follows:

# SUMMARY OF PRINTING-1916

]	mpressions
Letter-heads	55,800
Field and Reserve Collection Labels	
Report, Requisition and Similar Forms	
Catalogue Cards, Tickets, Miscellaneous	
Programs, Circulars, Statements	
Color Plates and Inserts	95,500
Individual Labels 371	
Descriptive Labels 1,169	
1,540 (average of 5 each)	7,700
	2-6-6-
	000,400

The total number of labels printed during the past five years is 12,550, so that it may truthfully be said that good progress has been made in labeling the collections on exhibition.

The City has again shown its good will by making an appropriation of \$15,657 for necessary repairs, and this has permitted much visible improvement in the exhibition halls and much invisible improvement in the way of sadly needed repairs to various sections of the roof, and, above all, to the roofs of the end towers, which have been for years a source of almost constant trouble. Also included in special repairs was the painting of the Forestry and Mexican Halls, the making over and painting of the South Corridor, second floor, and the painting of the Hall of the Age of Mammals and that of the Age of Man. The Visitors' Room, Superintendent's Office, Primates Hall

and that of the Synoptic Series of Mammals have also been painted to their very great improvement and to the dèlectation of the visitor.

It has also been possible with the special appropriation to replace at last the old and badly corroded return lines of the North Wing, in use for fifteen years, with new piping, and to introduce new, semi-indirect lighting in the Tertiary and Quaternary Halls, fourth floor: these halls are now the best lighted in the building.

All the above repairs, replacements and improvements have been made by the Museum force.

As part of the equipment work, there have been built in the Museum shops another 120-drawer case for lantern slides, 300 glazed drawers for insects, 800 trays for standard storage cases and 200 feet of iron galleries. The metal storage racks for fossil vertebrates have been completed and metal shelving has been installed around the anthropological storerooms, to provide room for pottery and other objects not injured by exposure to light and air; 37 metal frame cases have been constructed, some of them of very considerable size, such as that for the duck-billed dinosaur, and various exhibition and storage cases of wood have been built for departments.

For the first time for many years, there has been a decrease, of about eight per cent., in the number of visitors, though in this particular case the reasons for the decrease seem apparent: the first three months of the year were unusually inclement; the traction strikes deterred many people from using the customary car lines, and the outbreak of infantile paralysis caused many children and their parents to stay at home and prevented others from returning as usual in the fall, while at the same time it prevented others from visiting the city.

A study of museum reports will show that at sporadic intervals, and usually without apparent reason, the attendance at a given museum will fall off many thousands. This condition is viewed usually with greater apprehension by boards of trustees than the writer believes to be warranted; such a drop is bound to come sooner or later, and it is a great mistake in such cases

to endeavor to increase attendance by special exhibitions. This is particularly true of great museums with large, well arranged exhibits, where such an effort diverts the attention of the staff and of the mechanics and preparators from their regular and systematic efforts to improve the museum collections. The writer does not believe that any exhibit that can ordinarily be made is of sufficient value to warrant the closing to visitors of an orderly, well labeled collection for so long as a month even.

The number of incoming and outgoing shipments, aside from mail packages, that have passed through the shipping room is 4,969, comprising 11,631 pieces.

The need of the Museum for the new wing and court building is more pressing than ever, and there is continued call

Building Needs

for cases, especially for storage cases for the study series. The unfortunate delay in providing for these has kept the case work just about six months behind the need for new cases.

The President in his report again shows the need of the important additions to the Museum just noted, and the Director feels the want of a third wing especially designed for workroom, storage and temporary exhibitions. This is emphasized by the fact that because of the work on the various large mural paintings, either actually in hand or projected, the Museum must either put up a temporary building (and it is very desirable that the work should be carried on near the Museum) or pay rent—either directly or in increased price for the paintings.

An incidental but somewhat expensive need is that for two flagstaffs, with ornamental bases, whereon to fly the national and city flags. These are estimated to cost not less than \$3,000. As it is only recently that Americans have awakened to the fact that they have a national flag, and still more recently that civic feeling has called for a city flag, it is to be hoped that this want may be filled.

### II. REPORTS OF THE DEPARTMENTS

### PUBLIC EDUCATION

# Department of Public Education

GEORGE H. SHERWOOD, Curator

The activities of the Department of Public Education may be separated into two major divisions:

Museum Extension to the Schools, The Photographic Work of the Museum.

In both these divisions there is a vast amount of time-consuming routine work which necessarily must be duplicated annually. The summary of the work for the year 1916, however, reveals substantial progress in all lines, enabling the Museum to maintain its present position as a factor in public education.

In its relations with the public schools, the department has broadened its activities by coming in contact with a larger number of teachers, by the improvement of its methods of instructing children, and by coöperation with teachers' training schools and with universities. There are certain features of the work which stand out as indicative of this expansion. Among these, special mention may be made of the participation in the entertainment of the National Education Association, which met in New York City in July; the publication of the first part of a Teachers' Handbook to the Exhibitions and Collections in The American Museum of Natural History; the preparation of an exhibit illustrating the Museum's educational activities, and the part taken in the Teachers' Institute which was organized prior to the opening of the schools in September.

The broad scope of the Museum's educational work is further illustrated by the following summary of the statistics for 1916:

The number of lantern slides lent to the public schools and other educational institutions has increased from 11,929 in 1915 to 38,912 in 1916, an increase of more than Summary of Statistics

226 per cent., while the number of public schools borrowing lantern slides has increased from 35 in 1915 to 63 in 1916, an increase of 80 per cent.

In 1916, the Lectures to Pupils of Public Schools, given in the Museum, numbered 76. The total attendance was 44,398. In the Local Lecture Centers, 38 lectures were given by members of the Museum staff, with a total attendance of 37,400. The grand total of attendance at all the 114 Lectures for School Children was 81,798.

Special Lectures for Teachers were given during Institute Week and at various other times during the year. The total attendance was 5,632.

In 1916, 704 Nature Study Collections were in circulation in 439 schools and reached 1,118,322 children.

The Circulating Collections for Libraries have been used by 12 of the Branch Libraries and have been studied by 31,829 children and 1,505 adults.

The Lectures for the Blind have been attended by the pupils from 9 of the public schools; the two lectures for the adult blind by 439 persons.

The Reference Collection of Negatives and Photographs has been increased by 12,616 negatives and 15,030 photographs, the total reference file now numbering 43,311 negatives and 60,690 photographs.

Under a special grant from the Board of Education, it has been possible to place our unique collection of lantern slides, which now numbers more than 20,000, at the disposal of teachers for class-room use. Circulars of information, catalogues of the slides and lecture manuscripts have been prepared and distributed to the teachers. As a further aid to teachers, ten complete lectures have been prepared on subjects taken from the syllabus of study issued by the Board of Education of the City of New York. These prepared lectures are in great demand, and it is planned to add others to the series as soon as possible. This

service to the schools was begun in April, 1915, and has been in charge of Miss Kathryn I. Upson. Unfortunately many of the schools are not equipped with an auditorium that can be darkened or with projection apparatus, and the use of the slides is thus necessarily restricted to relatively few schools. In view of these facts, the growth of the work, as shown by the following statistics, is encouraging:

	1915	1916
Number of Loans of Slides Made	196	680
Number of Institutions Supplied	51	93
Number of Slides Circulated	11,929	38,912

It is hoped that all the schools may be equipped with stereoption lanterns at an early date, in order to avail themselves of the use of these slides.

The nature of the Museum's lectures for school children has become so well known that it is necessary to say only that the usual courses have been given during the year.

Lectures for School Children in the Museum In addition to the lectures of the regular courses, many special lectures have been given to pupils of the elementary and high schools.

In all, 76 lectures were given in the Museum, and the total attendance was 44,398. That this was somewhat below the average is due in part to the infantile paralysis epidemic and to inclement weather.

The department has maintained two local lecture centers in the schools, namely, at the Washington Irving High School,

in coöperation with Miss Rosemary F. Mullen, and in Public School 64, in coöperation with Mr. William E. Grady. In addition to this, a number of lectures have been given by special request in other schools.

These lectures are repetitions of those given at the Museum. The total number given outside the Museum was 38, and the total attendance 37,400. The many appeals from teachers to have these lectures given in their schools indicate that they are of real educational value and lead us to believe that the most effective expansion of the Museum educational work would be the establishment of other local lecture centers. Such

expansion cannot be undertaken without a larger staff and further appropriations.

The teachers' program of routine work is so full that the opportunities the Museum offers are apt to be overlooked. During the past year, special efforts have been Cooperation made to show the teachers how they may use with Teachers the Museum. The annual meeting of the National Education Association was held in New York City, July 1 to 8, 1916, and the Department of Public Education took an active part in the entertainment of this organization. This was done in two ways: First, a Teachers' Handbook to the Exhibitions and Collections in The American Museum of Natural History was begun by the publication of Part I, which treats of "The North American Indian Collections, Their Use in Elementary English, History and Geography and in High School History and Economics." This is a forty-eight-page booklet written by Miss Ann E. Thomas of this department. Secondly, a special exhibit in the fover of the Museum was prepared, illustrating all the phases of our extension work with the Public Schools, the Public Libraries and the Blind.

On account of the epidemic of poliomyelitis during the summer and autumn of 1916, it was decided not to open the public schools on September 11, the date originally set, and, instead of regular school work during the two weeks following this date, there was conducted a Teachers' Institute, organized under the direction of the Board of Education. Daily meetings were held in centers scattered over Greater New York, and by request the department took part in a number of these. In this connection eight lectures were given, at which nearly 5,000 teachers were present. Besides these lectures, several conferences were held with delegations of teachers who came to the Museum to examine material available for class-room use. The Teachers' Institute gave the department an excellent opportunity to come into closer contact with the teachers of the public schools.

Free docent service is offered by the department to teachers and classes from private schools as well as from the public schools of Greater New York and vicinity. This service is valuable, because it has the advantage of direct personal contact between teacher and pupil. During the year, 2,758 pupils received instruction concerning the exhibits in the Museum in this way. In addition, similar service is provided for Members of the Museum and their friends when requested. Much time is required in this work, for, although the parties are small, the calls for instructors are frequent.

Heretofore the docent service has been incidental to the other activities of the department, chiefly because the routine work of the assistants assigned to this service Coöperation with does not permit them to give adequate time to Barnard College preparation. Instruction in the exhibition halls is important, and the subject is being studied more intensively in the experiment that is being carried on in connection with Barnard College. In the autumn, at the opening of the college year, Dean Gildersleeve made arrangements with the Museum providing for laboratory work in the anthropological halls, and the students in Professor Boas's undergraduate class at Barnard visit the Museum in three sections, in groups of from five to nine. For an hour and a half, under the instruction of Miss Ann E. Thomas of the Museum, the collections are studied and notes and drawings are made.

That teachers, especially the high school teachers, appreciate the teaching value of the collections is evidenced by the fact that twice a year, during Regents' Week, classes from the high schools come to the Museum for definite laboratory work in connection with their studies. The high school pupils in attendance numbered 8,242, and included classes from the Morris, Evander Childs, Washington Irving, DeWitt Clinton, Julia Richman and Eastern District High Schools.

The educational work for the blind—evening lectures for adults, and illustrated talks for school children—has been car-

ried on during the year through the Jonathan Thorne Memorial Fund. For the adult blind, two lectures were given. On March 17, Mr. George K. Cherrie told of his adventures in a talk entitled "With Colonel Roosevelt on the River of Doubt," and on May 26 Mr. Charles Crawford Gorst spoke on "Bird Music."

For the blind children of the public schools, talks were given at the Museum during school hours, and collections of birds, mammals and insects and large relief globes of the world were sent to the class rooms. Ten new and improved globes have been added to the number already in circulation, and schools in Brooklyn, as well as in Manhattan, have been supplied. The talks were always carefully illustrated by objects which the children could handle. Each teacher selected five subjects especially suited to her class-room work, and, visiting the Museum at a time most convenient to her, received a lesson adapted to the needs of her pupils. The classes were always small, giving the opportunity, so necessary in helping blind children, for individual attention.

The Jonathan Thorne Memorial Fund covers not only the expense incurred in providing for the lectures and talks, but it also refunds, whenever necessary, the car Jonathan Thorne fares of the blind adults and children and their Memorial Fund guides. In this way, many who could not otherwise afford to do so can take advantage of the opportunities opened to them by the Museum. Moreover, for the adults who have no friends or relatives upon whom they can depend for guidance to the evening lectures, the Boy Scouts make provision, calling for them before the lecture and guiding them to their homes at the conclusion of the entertainment. We desire to express our appreciation for this courtesy to Mr. Lorillard Spencer, Jr., Scout Commissioner of Manhattan, Mr. W. B. Holcombe, Scout Commissioner of Brooklyn, and Mr. C. Elmore Smith, Scout Commissioner of Richmond.

The general lectures have included two series of Science Stories for the Children of Members given on Saturday morn-



DEPARTMENT OF PUBLIC EDUCATION

# A LESSON IN METHODS OF TRANSPORTATION

A feature of the Museum's work for the Blind, carried on through the Jonathan Thorne Memorial First is the regular attendance of the blind children from the public schools



ings; two courses of lectures for Members on Thursday evenings; the Jesup Lectures, consisting of eight lectures on

Dynamic Psychology by Professor Robert S. Wood-worth, given in coöperation with Columbia University. Free lectures under the auspices of the Board of Education were given in the auditorium from October to May, while the New York Academy of Sciences and Affiliated Societies have held their sessions at the Museum. In addition to these, there have been a number of special lectures in conjunction with the American Scenic and Historic Preservation Society and other organizations.

Although the present status of nature study in the schools is somewhat indefinite and is dependent largely upon the inter-

Circulating Nature Study Collections est of the individual teacher, there has been a continuous demand for the Museum circulating collections. During the year the number of collections in circulation was 704, and, according

to statistics furnished by the teachers, they were studied by 1,073,188 pupils of the New York City Schools—a pupil being counted once for each case of specimens studied. Fifty cabinets were rented to the Newark, New Jersey, Schools, and these were studied during the spring months by 45,134 pupils. This makes the total number of pupils reached by these collections, 1,118,322. Undoubtedly the number of pupils reached would have been greater had not the epidemic of infantile paralysis delayed the opening of the schools.

The table of statistics in comparison with previous years is given below:

Comparative Statistics Relating to the Circulating Collections for the Past Seven Years

	1910	1911	1912	1913	1914	1915	1916
Number of Collections in Use  Number of Schools	390	512	537	597	675	671	704
of Greater New York Supplied.	334	486	491	501	470	473	439
Number of Pupils Studying the Collections	839,089	1,253,435	1,275,890	1,378,599	1,273,853	1,238,581	1,118,322

Twelve of the branch libraries of New York City have availed themselves, during the year, of the opportunity to borrow the circulating loan collections prepared Library Loan for the children's rooms by the Museum. Sev-Exhibitions eral departments of the Museum have coöperated in the making up of the collections, the Department of Anthropology being especially helpful. For the travel series, specimens giving a picture of the country and the life of the people were chosen, sometimes supplemented by mounted photographs. The Indian collections contained models, dolls and clothing, trinkets, weapons, etc., made and used by the Indians themselves. About 31,829 children and 1,505 adults saw the exhibits, and the librarians report that the circulation of the books illustrated by these exhibits was appreciably increased.

In several libraries, coöperation with the schools of the neighborhood was encouraged. For example, Dr. Lee, the Superintendent of Districts 16 and 17, saw the Mexican Collection at the Aguilar Branch children's room, and, in order that his pupils might be studying Mexico at the time that the exhibit was available at the library, changed the course of study of all his sixth-grade classes. The children visited the library with their teachers, and a special table, with books and pictures pertinent to the collection, was set aside for them. Explanatory talks were also given by the librarians.

In addition to its function as intermediary agent between the Museum and the educational system of the city, the Department of Public Education is the custodian of all the negatives, photographs, lantern slides and electrotypes in the Museum and is also the official photographer of the Museum. During the year 1916, 1,318 negatives, 5,363 prints, 2,328 lantern slides, 389 enlargements and 15 transparencies have been made. While these statistics bear witness to the efficiency of our one photographer, Mr. Julius Kirschner, they do not in any degree express the patience, energy and ingenuity he has displayed in producing the desired results.

The reference file now numbers 43,311 negatives and 60,690 photographs. Teachers, writers and other educators have been keen to avail themselves of this source of reliable information on the latest results of research or exploration.

The most important addition to the reference file during the year has been the superb collection of negatives made by Mr. Herbert Lang (at his own expense) on the Museum's Congo Expedition and permanently deposited by him with the Museum. The collection numbers 9,500 negatives of the highest quality and gives a remarkable record of the scope of the field work of Messrs. Lang and Chapin. Another important addition to the deposit series of negatives consists of 1,300 negatives taken by Miss Mary C. Dickerson in southern New England. These negatives include intimate field studies of mammals, birds, batrachians, flowers and trees, and scenic views of distinct biological and educational value.

The rapid development of motion pictures has brought into the educational field another important method of imparting instruction to children and adults. It is the aim, therefore, of the Museum's Department of Public Education to have in its possession a set of the finest motion picture films of educational value that can be secured.

The films depicting African life presented by Mr. Paul J. Rainey and Mr. James Barnes, and Mr. M. P. Skinner's film of Yellowstone Park, Wyoming, formed a splendid nucleus for the library. During the year 1916, 530 feet of film of birds and animals, taken by Mr. David S. Ball, and 1,200 feet picturing the life and customs of the Indians of the Southwest, taken by Dr. Pliny E. Goddard, were added to the collection. Through the generosity of Mr. R. Fulton Cutting, the department has secured a set of four reels of the film of "Hiawatha" produced by Mr. F. E. Moore—a most valuable addition to our series.

The rapid growth of the department has necessitated a greater systematization of the work. As usual, the principal

administrative duties of the department have fallen upon the Assistant Curator, Dr. G. Clyde Fisher, who has been assisted by Miss Helen M. Vreeland. The relations with the Public Libraries and the work for the blind have been under the direction of Miss Ann E. Thomas, assisted by Dr. Fisher and Miss Clara A. Kelsey. All the members of the department have been called upon for docent service.

During the year 1916, the Department of Public Education has profited by the helpful cooperation of a number of firms and individuals, as indicated below: Mr. Acknowledgments Ernest Harold Baynes, Brown Brothers, C. Beseler Co. and Mr. E. W. Deming, by the loan of negatives for making lantern slides; the Canadian Pacific Railway, the Eastern Steamship Corporation, the International Harvester Co., Brown Brothers, the Milwaukee Museum, the New York Tenement House Commission and the New York Department of Street Cleaning, by the loan of photographs for the purpose of making lantern slides; Mr. Lee Keedick, Mr. John Burroughs, the Canadian Pacific Railway, and The New York State Conservation Commission, by the loan of motion picture films for use in lectures to children; Mr. William de la M. Cary, by permission to photograph paintings for the purpose of making lantern slides; the Bureau of Municipal Research, by furnishing books containing information for the preparation of lectures; the Commissioner of Accounts, by furnishing charts for the purpose of making lantern slides; the Glens Falls Insurance Co., by the loan of lithographs for the purpose of making lantern slides; the New York Public Library, by the loan of books on Japan for use in the National Education Association Exhibit.

## GEOLOGY AND EXTINCT INVERTEBRATES

# Department of Geology and Invertebrate Palæontology

EDMUND OTIS HOVEY, Curator

Curator Edmund Otis Hovey, who in 1915 was placed in charge of the relief ship sent to North Greenland to bring back

the members of the Crocker Land Expedition, has been absent from the department during the year, owing to the failure of the "Cluett" to perform its mission. The "Crocker Land Expedition" to certain mishaps to the ship and extremely bad ice conditions in Melville Bay, did not succeed in going farther north than North Star Bay, some 125 miles south of Etah, arriving at North Star Bay September 12, 1915.

By means of a motor launch placed at his disposal by Mr. Peter Freuchen, Mr. Rasmussen's representative in North Greenland, Dr. Hovey then proceeded to Etah and brought back to the "Cluett" four members of the expedition, Messrs. Ekblaw, Green, Allen and Tanquary, Messrs. MacMillan, Hunt and Small being absent from Etah at the time. On the return trip from Etah, Dr. Hovey met Mr. MacMillan and made arrangements for him, Dr. Hunt and Mr. Small to remain another year in Greenland, as it was not feasible to bring out the collections and the equipment of the expedition.

On September 19, the "Cluett" left North Star Bay for America, but was caught in the ice and was finally forced to go into winter quarters at Parker Snow Bay, some fifty miles southwest of the Rasmussen station at North Star Bay.

In January, 1916, because of the shortage of provisions on the "Cluett," Dr. Hovey and Messrs. Green, Allen and Tanquary undertook the 1300-mile sledge journey over the sea ice to the settlements in South Greenland. On the first day out, they covered about sixty miles; but the physical exertion proved too great for Dr. Hovey and he found it necessary to return to the ship. Messrs. Tanquary, Allen and Green continued the journey and ultimately reached South Greenland and returned to New York by way of Copenhagen. Dr. Tanquary, the first to arrive, informed the Crocker Land Committee that it would be necessary to send a second relief ship to the Arctic, and in due time the "Danmark" was chartered from the Greenland Mining Company, provisioned, and started from Ivigtut, South Greenland, in July, 1916, for Thule and Etah.

Dr. Hovey did not choose to come out on the "Cluett," which returned to St. John in early September, 1916, since he was

daily expecting the arrival of the relief steamer which Mr. Rasmussen, the Danish explorer, informed him the Crocker Land Committee was sending north. Unfortunately, this second relief ship, the "Danmark," did not return in the summer of 1916, and Dr. Hovey and the members of the Crocker Land Expedition have been forced to spend another winter in Greenland.

Owing to Dr. Hovey's enforced absence in the field, the department was unable to undertake additional field work.

The New York Academy of Sciences reëlected Curator Hovey Recording Secretary and Editor for 1916, and the Staff Geological Society of America retained him as Recording Secretary for 1916 and renominated him for that office for 1917. Assistant Curator Reeds served as Secretary of the Section of Geology and Mineralogy of the New York Academy of Sciences during 1916 and was reëlected for 1917.

In April, Miss Anna I. Jonas, Ph.D. in Geology, Bryn Mawr College 1912, was employed as special assistant in connection with the preliminary identification of certain important groups of fossils and the revision of exhibits.

In the absence of Curator Hovey, the Director requested Assistant Curator Reeds to take up the revision of the departmental exhibit which had been started in 1912.

Revision of Exhibits

His first efforts were devoted to the preparation of a set of drawings to scale of the exhibition hall and its cases. The Martinique exhibit was revised, and a representative portion installed on the third floor stairway landing alongside the Mont Pelé transparencies, and the congestion reduced by a rearrangement of cases and revision of exhibit material.

In the meantime, Messrs. Brickner and Berlin were intrusted with the arduous task of bringing together the 10,000 typed and figured specimens and arranging them according to the entries in the Museum Bulletin, Volume XI, the published catalogue of the most extensive and valuable collection of its kind in America. This collection is highly prized by all geologists and palæontologists,

since it is the initial set of specimens upon which the sciences of stratigraphic geology and invertebrate palæontology were built in North America. It is a great source of reference, and, although incomplete, it is the standard set for Paleozoic rocks. The Trustees of this Museum took upon themselves a great responsibility when they purchased these specimens from James Hall, for they obligated themselves to all working geologists to care for the specimens, not only for this generation but for all time to come. Experience has proved that more and better care is taken of such specimens when on exhibition than when lodged elsewhere.

The biologic and stratigraphic series, comprising some 90,000 catalogued specimens, are being rearranged according to a method which enhances their value for study and exhibition purposes.

Selected specimens of the gastropods and plants of the biologic and stratigraphic series have already been mounted on tablets especially devised for this purpose. It will take two men with no interruptions about two years to mount the specimens which have already been selected.

During March and April, the Assistant Curator, with the assistance of Mr. A. Briesemeister and Mr. George Robertson. constructed for Professor Osborn's Hale Lectures Models and a set of six paleogeographic globe relief models of Maps North America, after outline maps supplied by Professor Charles Schuchert of Yale University. So far as known, this was the first attempt to represent in relief and outline the ancient land surfaces of six stages in the evolution of the North American continent. The various incursions of the sea over the land are painted in blue on the globe surface. Each stage is developed on a globe sector which has a radius of three feet and three and one-half inches. Three sectors form a hemisphere. The models have been placed on exhibition at the entrance to the hall.

After the completion of the six paleogeographic models, the relief of the ocean floors about the North American continent was modeled in clay on a mold of the above-mentioned globe by Mr. P. B. Hill. The data were supplied by the

Assistant Curator and outlined on the globe surface by Mr. A. Briesemeister. Eight casts of this ocean relief have been made, and they will serve as excellent bases for modeling the continental relief of North America during eight periods of its history. They will illustrate the distribution of the epicontinental seas, in which certain sediments and fossil shells were deposited. As paleogeography is still a subject of research, it will take some time to gather the data and complete the models.

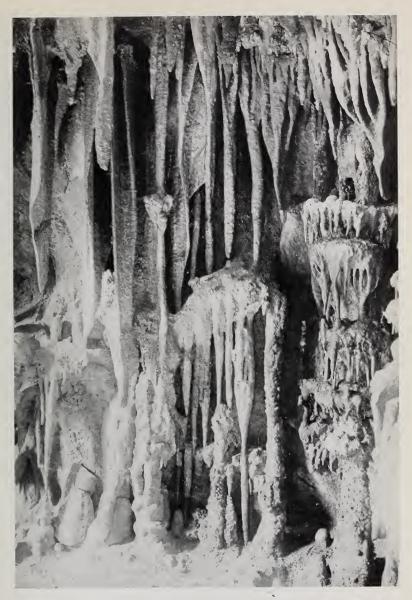
With the aid of the excellent topographic map of the Grand Cañon which the United States Geological Survey has prepared, the Assistant Curator is constructing a relief model of the Grand Cañon, Mr. P. B. Hill assisting.

The Weyer's Cave Exhibit, the installation of which has been in charge of Mr. Peters of the Department of Preparation, was completed and opened to the public in December.

In connection with the work on the Porto Rico collections, the Assistant Curator, with the aid of Mr. A. Briesemeister as draftsman, prepared two excellent maps, one of Porto Rico, the other of the West Indian region.

Many inquiries concerning the seismograph were answered during the year. Plans and specifications were forwarded to Seismograph Professor H. F. Reid of Johns Hopkins University, Baltimore. Excellent records of earthquakes were secured, many of which were consulted in the courts of New York and near-by States. The great dynamite explosions on Black Tom Island, New Jersey, were not recorded, although many down-town buildings in New York were affected. This is an instance showing that, although great dynamic explosions produce violent air concussions, they do not perceptibly affect the earth.

With the assistance of Messrs. Hill, Brickner and Berlin for a month, the washing, cleaning and sorting of the large Porto Rico collection were finished. Dr. Jonas spent about one month in helping the Assistant Curator with the preliminary identifications of the more important groups of fossils. The fossil plants of the Porto Rican col-



DEPARTMENT OF GEOLOGY
REPRODUCTION OF WEYER'S CAVE



lection were turned over to Director Britton and Dr. Arthur Hollick of the New York Botanical Garden.

With the assistance of Mr. Lloyd W. Maxwell for three months, a large number of invertebrate lots in the Hunton collection from Oklahoma was sorted, and the species named.

The most important accession of the year was the complete fall of the Burkett siderite. Other valuable accessions were the donations of Miss A. K. Harned of 110 specimens of Gold, Silver, Lead and Copper ores from Colorado; Mr. E. J. Valeur's thirty-five rock specimens and two slabs containing Tertiary fossils from Santo Domingo; Mr. Samuel Howard's fourteen samples of marble from Alaska, Texas and Vermont; samples of marble were also donated by the Middlebury Marble Company and by Mr. Thomas T. Callahan of Gouverneur, N. Y. Excellent fossil specimens were presented to the department by Dr. L. Hussakof, Mr. Charles Platz and Mrs. Georgia M. Clapham.

Two scientific papers and a number of abstracts of papers presented before the Geological Society of America and the New York Academy of Sciences have been published by members of the department during the year.

### MINERALS

# Department of Mineralogy

L. P. GRATACAP, Curator

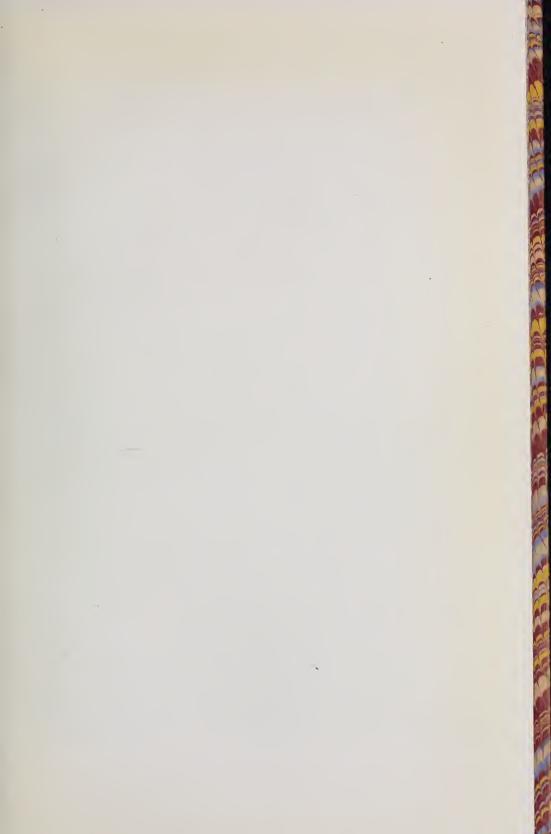
The Morgan Collection of Gems and the Bement Collection of Minerals have become distinct educational assets to the city. They were visited during October, November and December, 1916, by more than 26,000 people. It is apparent that these figures strongly reinforce the suggestions made in our last annual report as to what might be the overwhelming effect of an adequate installation of the Gem Collection and its enlargement.

From observation it is almost certainly to be inferred that a greater number of students, in a real sense, make use of the

Hall of Minerals, and, viewed in this light, the percentage of students in the whole number of the attendance is much above fifty per cent., a very satisfactory evidence of the serious use of the collections. The people, preponderatingly men, who remained in each hall for a considerable time evinced a studious interest, attributable perhaps to previous knowledge, or to newly awakened recognition of the character and beauty of minerals, though obviously, in the Gem Room, their attention partook of the popular admiration that gems universally excite.

The Collection of Minerals, during the past year, has been enriched by a very considerable group of specimens, some of which have unusual beauty, some are of phenomenal size, while among the additions are specimens of rare or lately described species.

The collection has been enlarged by the addition of two hundred specimens, among which may be mentioned some interesting examples of the change from Anhydrite to Thaumasite, both found in the New Jersey trap-rocks, confirming the discovery of Mr. Frederick I. Allen of the origin of the latter singular compound, through a progressive alteration in the former. Some of the specimens, together with others illustrating the origin of the diamond-shaped cavities in the New Jersey Zeolites and Quartzes, of the trap region, as derivative from vanished crystals of Glauberite, will appear in Dr. W. T. Schaller's forthcoming Bulletin (United States Geological Survey). A Neptunite specimen of great size and richness, rivaling the examples now in the National Museum at Washington; a superb series of the Pyrites of Colorado with others from Utah, remarkable for their beauty, size and crystallographic novelty; Tellurium crystals (furnace products); additions to the suite of Californian precious and parti-colored Tourmalines; Benitoite (the unique gem-stone of California now rapidly disappearing in the mineral market); some admirable crystallized Golds, and a large single nugget of Gold from the placer of Hunter Creek, Alaska; an astonishing crystallized surface of Dioptase from Siberia; Native Copper in clustered strings of crystals, with Calcite, from Bisbee, Arizona; and rare or new species, such as Ampangabeite, Beta-





DEPARTMENT OF WOODS AND FORESTRY

CHARLES SPRAGUE SARGENT
(Clay model)

This bust by C. S. Pietro is to be executed in bronze and placed in the Hall of the Jesup Collection of North American Woods, in appreciation of Professor Sargent's services to the Museum and to the science of silviculture

fite (from Professor A. La Croix, Paris), Cebollite, Creedite, Hodgkinsonite, Parahopeite, Seartesite, Shattuckite and Wiikite, may be selected as indicative of the long suite of additions, all contributory to the collection's value and completeness.

As symptomatic of conditions now everywhere prevalent, though it would be hazardous to assign identical reasons, the price of minerals has enormously advanced, and, as a simple matter of appraisement, the fine collection now assembled in the Hall of Minerals has become a cash asset probably more than doubled in value. In this connection it is worthy of consideration that, according to many more or less well informed opinions, the offer upon the open market of numerous remarkable private collections of minerals will form one of the commercial sequelæ of the present European war.

### WOODS AND FORESTRY

## Department of Woods and Forestry

MARY CYNTHIA DICKERSON, Curator

On the recommendation of President Henry Fairfield Osborn, Mr. C. S. Pietro was commissioned by the Trustees to execute for the Forestry Hall a bronze bust of Professor Charles Sprague Sargent, director of the Arnold Arboretum, Brookline, Massachusetts. This is in appreciation of the services of Professor Sargent to the American Museum in assembling the Jesup Collection of North American Woods, and in recognition of his valuable contributions to the science of silviculture. A bust of Mr. John Muir, executed by the same artist, has been offered to the Museum by Mrs. E. H. Harriman.

Studies for the mural for the east end of the hall were made during the summer by Mr. Hobart Nichols, and a quarter-size sketch prepared. This mural will show a sunlit forest interior, and between the trees in the distance the forest-covered mountain slopes of a watershed.

The department counts itself fortunate in having secured the artist, Mr. Milton D. Copulos, to carry on the work of preparation of sprays of flowers, fruits and leaves for the trees of the hall. The quality of work now being done reaches the highest standard of accuracy, beauty and permanency. Among the sprays installed during the year are the hornbeam (201 leaves), the Florida turkey oak (30 leaves), the Florida bluejack oak (92 leaves), the Florida live oak (93 leaves), the fringe tree (63 leaves), the paper birch (123 leaves), the sugar maple (58 leaves), and the shellbark hickory (80 leaves).

Mr. Barrington Moore, a graduate of the School of Forestry, Yale University, has been appointed associate curator in the department. Mr. Moore was a member of the United States Forest Service from 1909 to 1914, and has done considerable independent research in silvics and silviculture. It is hoped that there will be notable progress in 1917 in the educational exhibits so long delayed because of lack of funds and assistance.

There have been some additions to the reference collection of foreign woods and to the descriptive labels in the hall. The walls of the hall have been tinted with a refreshing shade of green that harmonizes well with the woods and the sprays of flowers and leaves in the cases. Among accessions special mention must be given to a small collection of California woods presented by Dr. C. Hart Merriam, and to a valuable specimen of the cones of Coulter's pine from 6,000 feet elevation in the San Jacinto Mountains.

In addition to the work of the department of forestry and that of herpetology, the editorship of *The American Museum Journal* has been carried.

# EXISTING INVERTEBRATES

# Department of Invertebrate Zoölogy

HENRY EDWARD CRAMPTON, Curator

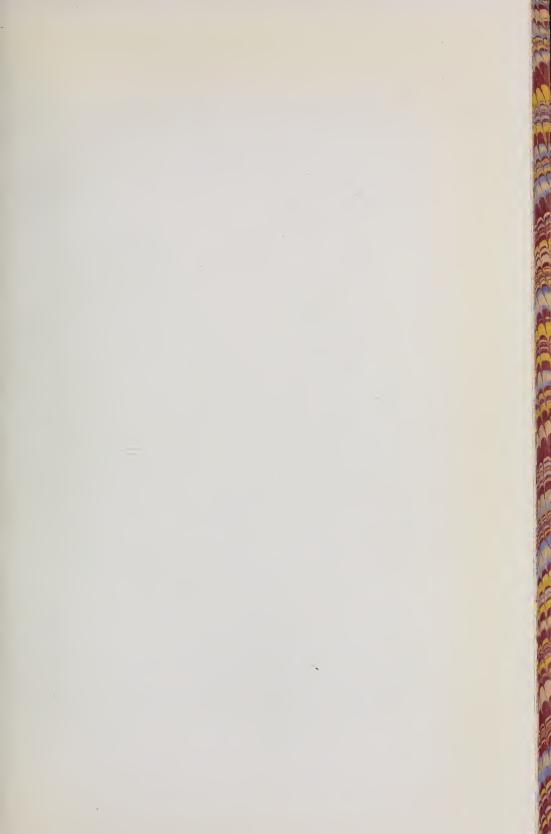
The activities of the past year have been concerned largely with the "consolidation" of the results of earlier field-work, research, publication and exhibition, for the greater effectiveness of the department as a part of the Museum. Mr. Miner, assisted by Mr. Shimotori and Mr. Olsen of the Preparation Staff, revisited Nahant and areas of Cape Ann, Massachusetts, to make final studies of inverte-

brates and their bionomic associates, with a view to the completion of the Tide Pool Group and the construction of additional models for the Darwin Hall. Mr. George Abbot James, on whose property the tide pool is situated, continued to extend his many courtesies to the members of the expedition. Later Mr. Miner devoted a month to studies of the Adirondack Myriapoda, at stations among the lakes of the Fulton Chain and on the neighboring mountains, securing about 2,000 specimens. Dr. Lutz, accompanied and assisted by Dr. Rehn of the Academy of Natural Sciences of Philadelphia, made an extended journey in southern Arizona and later proceeded alone to California and Utah; his expedition was supported by Mr. B. Preston Clark, who generously continued his assistance of the entomological work of the department. The fruits of this journey are about 20,000 specimens of unusual value for the study of the larger problems of insect distribution and evolution. In an expedition to the southeastern United States. which is also an important area for investigation. Mr. Watson obtained about 6,000 insects; this work was prosecuted through the aid of Mr. Gaylord C. Hall, another of the department's benefactors.

Curator Crampton's researches on Polynesian gastropods, under the auspices of the Carnegie Institution of Washington, have been advanced, and the first extensive quarto Research and volume, which deals with the species of Tahiti. Publications has finally appeared. Curator Gratacap has devoted much time to the identification and study of the extensive molluscan collections from Porto Rico. Mr. Fisk's work on the West Indian echinoderms was unfortunately terminated by his illness and subsequent withdrawal from the staff. Professor Treadwell has finished the study of numerous small collections of annulates and has taken up the Porto Rican series, while Professor Raymond C. Osburn has advanced his investigations of the Bryozoa. Dr. Willard G. Van Name, the new member of the staff, has worked over the West Indian ascidians and has nearly completed a valuable paper on that group. Publications in the field of entomology include Dr. Lutz's admirable paper on "The Geographic Distribution of

Bombidæ," a "Descriptive Catalogue of West Indian Cicindelinæ" by Messrs. Leng and Mutchler, the "Lepidoptera of Florida" by John A. Grossbeck, edited by Mr. F. E. Watson, and a paper now in press entitled "Supplement to the Preliminary List of the Coleoptera of the West Indies" by Messrs. Leng and Mutchler. The department contemplates the early publication also of "The Catocaline Moths of North America" by William Beutenmueller, with additions and revisions by William Barnes and J. McDunnough. Mr. Miner's work on Myriapoda has been carried forward, and a paper will be ready for publication within the year 1917. All members of the staff have been engaged to a greater or less degree in investigations of the extensive Porto Rican collection of invertebrates.

During the past year the time of Curator Gratacap has been taken up largely with work connected with the Museum's conchological interests, including the identification of Shell specimens from various collections-embracing Collections much excellent material-in the Department of Invertebrate Zoölogy. In the Hall of Shells a great advance has been made in reprinting the old labels, through the efforts of Mr. Joseph Ouinn: additions of some importance have been secured for the Synoptical Series, consisting of fossil Palæozoic and Mesozoic Cephalopoda, illustrating the earlier forms whose single descendant to-day is the Nautilus. Of noteworthy importance also are numerous species, purchased from Sowerby and Fulton of London, to fill out the defective series in the groups of characteristic Mollusca from the Molluscan Provinces. A few features connected with the Ornamental Uses of Shells were incorporated in that exhibit, and an extension made in the Da Gomez Collection of Deformed and Abnormal Shells, among which the suite of aberrant Cybraa lynx deserves special mention; this was obtained from the collection of the late Mr. John Ford. With the assistance of the Director, and employing the artistic facility of Mr. Albert Operti, a series of colored photographs and explanatory labels will be installed, illustrating stages in the manufacture of the pearl button from the river-mussel to the finished product. A few transparencies have been added, and the subjects for





DEPARTMENT OF INVERTEBRATE ZOÖLOGY
NAHANT TIDE POOL GROUP
(In preparation)

Habitat group showing the marine life of a New England Tide Pool

others, in the educational groups, are being secured. The assistance of Mr. Walter F. Webb of Rochester (a well-known shell collector in the Philippine archipelago) has been promised for the composition of four shell-groups, and pre-liminary steps have been taken to obtain the necessary data and raw material for their construction. A valuable purchase of West Coast shells has been made, though Curator Gratacap is confident it will require a supplementary purchase properly to complete it; the work on the study collection was resumed, and, with interruptions, is being pursued. The development of the study collection and the revision of the nomenclature in the large series of exhibited specimens are, and will be for a long time, the most important tasks for the Curator to consider.

The changes in the staff of this division have retarded our progress, which nevertheless has been marked. Mr. Fisk's illness led to his permanent retirement, and his place was taken by Dr. Willard G. Van Name, formerly zoölogist of the New York State Museum at Albany. The death of Mr. Ignaz Matausch and the resignation of Mr. Edward Mueller after a long illness crippled the work of the preparation staff; their places have been filled by Mr. Chris E. Olsen and Mr. M. Nishimura, who have capably continued the work on the Tide Pool Group, so that this notable addition to the ecological series in the Darwin Hall will be speedily completed.

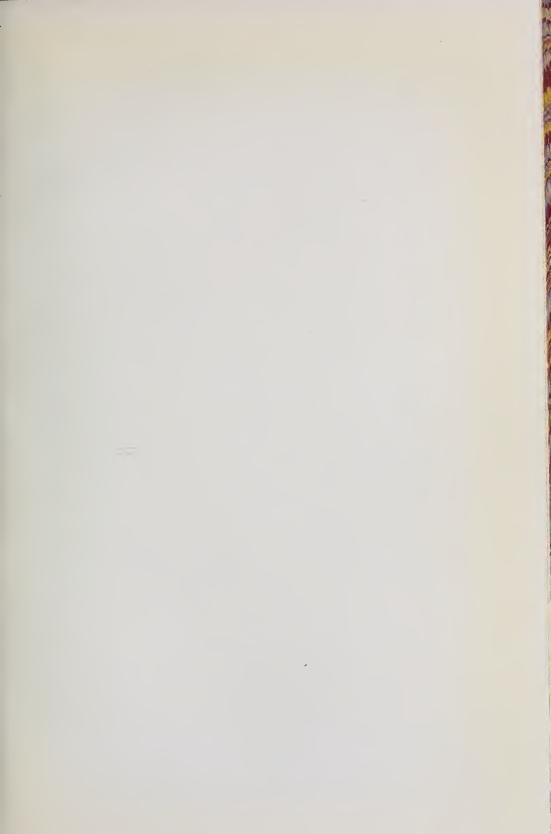
Among the new models recently installed are the *Phascolosoma* head, the complicated *Volvox*General Invertebrates and Darwin Hall colony, Clathrulina elegans, Monosiga globosa, Elatomma juniperina, and five examples of pathogenic Protozoa. Others are approaching completion.

The exhibit of Domesticated Pigeons in the Darwin Series has been amplified by a series of striking varieties secured by Director Lucas. The reorganization of the cases has been begun, new labels have been prepared, and the entire series of exhibits has been carefully examined and cleaned. It has been a source of great satisfaction that the Darwin Hall has

been used to a largely increased degree: 11,442 pupils of 273 classes from 122 schools, colleges and other institutions have visited this hall during the past year. It remains to be added that there is urgent need for more room to accommodate the voluminous study collections, for which the present facilities are entirely inadequate.

The exhibition hall has received notable additions in the way of smaller bionomic exhibits and specimens which illustrate biological principles; the activities in this Insects and sphere, as directed by Dr. Lutz, have resulted in an Spiders unusual degree of effectiveness in the organization of the Hall of Insect Life. Carrying on the plans of this division, the Porto Rican collections have received considerable attention and will continue to do so. Field work on the lifehistories of local insects is essential both for its scientific results and for the procuring of material to be installed in the Hall of Insect Life. Probably Cuba will be taken as a field of investigation in the near future, on account of its relation to the other areas of the West Indies and the neighboring continents with which the comprehensive studies of the department are concerned. The division of insects is sadly in need of more space for its greatly amplified and reorganized collections; germane in this connection is the need for a larger permanent staff of specialists to work up the groups that necessarily have received little attention aside from their routine care. During the year, however, much progress has been made through the work of temporary assistants, notably Mr. C. W. Leng, members of the New York Entomological Society, Messrs. W. J. Holland, J. A. G. Rehn and Morgan Hebbard, as well as Dr. J. Bequaert and Messrs. J. S. Hine, H. G. Barber and H. S. Barber.

Certain notable accessions have been mentioned in the foregoing paragraphs, such as the series of insects secured through the assistance of Messrs. Clark and Hall, and of the members of the New York Entomological Society, as well as the collections of Mr. Miner and the shells specified by Curator Gratacap. Additional items of special





DEPARTMENT OF ICHTHYOLOGY.—CAST OF THE DEVIL-FISH (MANTA)
From specimen captured by Russell J. Coles

value are collections illustrating the work of insects, given by Mr. E. B. Southwick and Mr. H. B. Weiss; Pacific Coast invertebrates received as exchanges with Professor E. C. Starks of Stanford University; invertebrates from Atlantic cables collected and presented by Captain Benoit Boland; 94 vials of annulates as a gift from Professor A. L. Treadwell; invertebrates from Santo Domingo collected by Mr. Clarence R. Halter of this Museum, and specimens of *Cerion* and of other land shells from Turks Island in the Bahama group, donated by Mr. L. L. Mowbray.

# RECENT AND EXTINCT FISHES, EXISTING REPTILES AND BATRACHIANS

# Department of Ichthyology and Herpetology

BASHFORD DEAN, Curator Emeritus
MARY CYNTHIA DICKERSON, Associate Curator of Herpetology

### **FISHES**

The work of the present year is summarized under four headings: Exhibition; Study Collections; Research and Publication: Administration.

In the foyer of the Museum a temporary exhibition was arranged in the summer to illustrate "man-eating" sharksin response to many inquiries, for this was a "shark Exhibition year" along the Atlantic Coast, and a number of bathers were killed or maimed. We showed, accordingly, casts of a large white shark (Carcharodon), of a blue shark (Prionace), of a brown shark (Carcharinus milberti), also teeth and jaws, together with such "accessories" as pilot-fish and sucking-fish. In the cases exhibiting fishes in their classificational arrangement, we record a number of changes: many new labels were put in place, forms were introduced to fill gaps in the series, an anatomical model was made (illustrating the head structures of a lamprey) and a simply mounted habitat group was installed. This shows the dolphin Coryphæna in pursuit of flying fish which are scattering into

the air in various positions. From a technical point of view, it may be mentioned that the fins in such models are difficult to make satisfactorily, but we believe that an excellent method has now been worked out by Mr. Horter, of the Department of Preparation.

The storeroom of fossil fishes has been completely overhauled: its materials have been effectively classified and rendered accessible; storage space has been gained and several scores of specimens have been worked out or repaired.

In the collection of alcoholic fishes, much work has been done by Mr. Nichols and his assistant Mr. Griscom in caring for the fishes from the Lang-Chapin expedition to the Congo. The entire collection has been overhauled to insure its preservation. Our catalogue has been enriched by 900 cards.

The examination of the Congo collection by Messrs. Nichols and Griscom will shortly be completed; six thousand fishes will have been listed, including thirty species hitherto undescribed. The report upon this valuable series will be ready for publication during the coming spring.

"A Bibliography of Fishes," a work which has been twenty-five years in preparation, is now completed, so far as the copy of the Author's volumes is concerned. Volume I, Authors A–K, comprising 730 pages and approximately 20,000 titles, has been printed and will shortly be distributed. Volume II, Authors L–Z, together with pre-Linnæan papers, is largely in the hands of the printer, the proof of over a hundred pages having already been corrected. The work on the Index volume is making rapid progress and should be completed during the year 1917. It is believed that this work will be the greatest boon to the student of fishes that the American Museum could possibly offer him, for it gives immediate access to the whole storehouse of ichthyological knowledge, old and new, anatomical, systematic, fish-cultural, embryological, palæontological, pathological, physiological. And in the future anyone

who seeks to enlarge the boundaries of fish knowledge will know safely where to begin, saving much time and avoiding gaps in his references. For completing this work and editing it, much credit is due to Dr. C. R. Eastman and his associates.

During the year eighteen articles have been published by members of the department and their associates.

In the organization of the department a number of changes have been made. Dr. Hussakof, associated with the department since 1904 (present department organized 1909), has retired from the curatorship, and, pending the appointment of a new Curator, Dr. Dean is supervising the departmental work. Two provisional assistants, Messrs. Arthur W. Henn and Ludlow Griscom, have been appointed, the former to assist Dr. Eastman in the bibliographical work, the latter to aid in the study of the Congo fishes.

### REPTILES AND BATRACHIANS

Through the use of a portion of the Cleveland H. Dodge Fund, the department was able to send an expedition to Nicaragua. This expedition is returning in January, Expeditions 1917, after six months in the field, with large collections of reptiles and batrachians, as well as of fishes, and a large series of photographs and of descriptive and ecological notes covering the collections. Nicaragua is interesting zoogeographically because of its position between the North and South American continents, and because of the possible previous land connections with the West Indies. The collections from this expedition will be especially valuable since no reptile nor batrachian material has heretofore been brought out from Nicaragua. A survey was made of the low eastern coastal region and of a portion of the western slope of the Chontales Mountains. The work will be published in 1917 by the collectors, Messrs. Clarence H. Halter and L. Alfred Mannhardt.

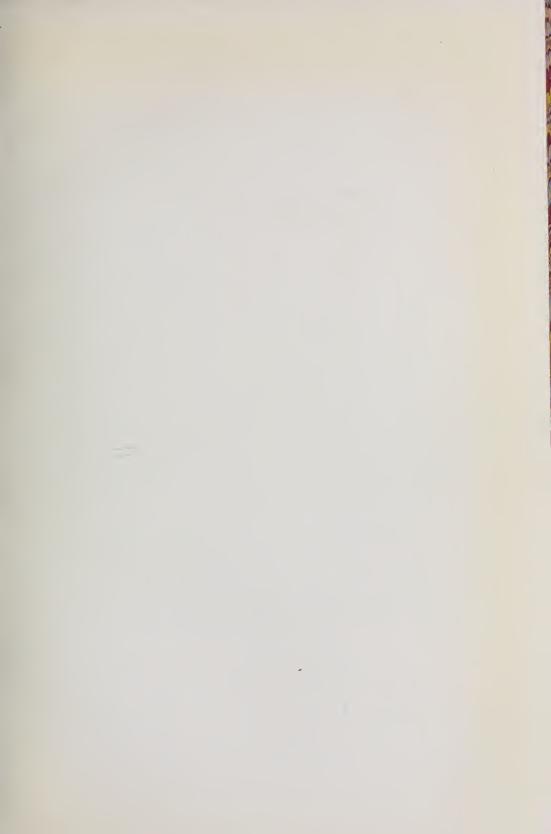
It was the good fortune of this department also to send Mr.

Emmett R. Dunn, instructor in zoölogy at Smith College, to the mountains of North Carolina for two months of the summer to make reptile and batrachian collections. This region is particularly interesting as a center of distribution of salamanders, and presents many peculiar forms. Type localities were visited and some one thousand specimens collected, notwithstanding considerable interference in plans by floods, which made many localities inaccessible by the usual routes. The collection contains some new species and large developmental series with larval forms never before recorded.

Reptile collections are being made for the department by Mr. Roy Chapman Andrews, of the Museum's Asiatic Zoölogical Expedition; one shipment has already been received. Also Mr. L. W. Williams, of Yale University, is acting as the Museum's representative in reptile work in China.

The department's resources have been greatly strengthened by its accessions of the year, the number of reptiles totaling 1,065 and the batrachians 1,398, outside of the collection of 2,500 Nicaragua specimens not yet received from the field. One of the largest accessions (861 salamanders alone) is the collection made in the mountains of North Carolina by Mr. Dunn. Much valuable exchange and reference material from the southeastern United States has been accumulated during the study for the Florida group. In this connection must be mentioned a gift of 269 specimens from Mr. Arthur L. Gillam.

A British Guiana collection has been received from Mr. C. William Beebe direct from the field and through the New York Zoölogical Society; a Dutch Guiana collection has been purchased; also a small collection from Argentina and Bolivia has come in from the Museum's South American expedition. The Albany Museum at Grahamstown, Africa, has given the department an unusually valuable collection in an exchange for exhibition reptile material. Also there have arrived a small collection of Colombian reptiles from the British Museum and a strikingly valuable collection from Dr. Malcolm A. Smith, of Siam.





DEPARTMENT OF HERPETOLOGY  $\hbox{ Cypress Swamp}$  Field Study for the Florida Reptile Group

Florida Group.—The largest piece of exhibition work on hand has been the Florida reptile group, planned last year. It will show the Florida alligator in particular, but Exhibition also will include practically all the reptiles and batrachians of Florida—except those also common at the North. The group is large, twenty feet wide by twelve feet deep. The alligators are represented at various ages, the adult female guarding the nest where the young are hatching from the large white eggs. To date the animal forms ready for the group (wax casts colored from life) are 26 alligators, 33 snakes of 15 species, and 26 turtles of 9 species. There are many lizards, among them the burrowing amphisbænian. Among interesting batrachians are the great gilled Siren, the smallest frog in the world and the smallest Bufo in the world. It is hoped the group will stand as a book plain to read on the reptile life of Florida, as well as a beautiful picture of a part of the Florida cypress swamps.

Gopher Turtle Group.—The gopher floor group (5 ft. by 7 ft.), planned at the same time as the Florida group, is in progress. The photographic and color studies have been made, and the plants have been collected; also the plaster molds of both animals and plants are ready for use.

Sphenodon Group.—Through coöperation with the museums of New Zealand, material and data have been obtained for the Sphenodon Group. The Canterbury Museum has been especially active, sending photographs of Karewa Island in the Bay of Plenty, and of the Sphenodon burrows there, specimens of ferns and shrubs, and of the volcanic rock, as well as of insects which form the food of Sphenodon; likewise detailed descriptions of these and of the birds that frequent the place have been sent by the careful observer, Mr. R. W. B. Oliver. The specimens, nine in number, have been prepared (wax casts from models and from living specimens). The character of the material is so authentic and definite that it is thought possible to construct a panoramic group of the world's most famous reptile, instead of the smaller floor group originally planned.

Synoptic Series.—Among the new forms added to the synop-

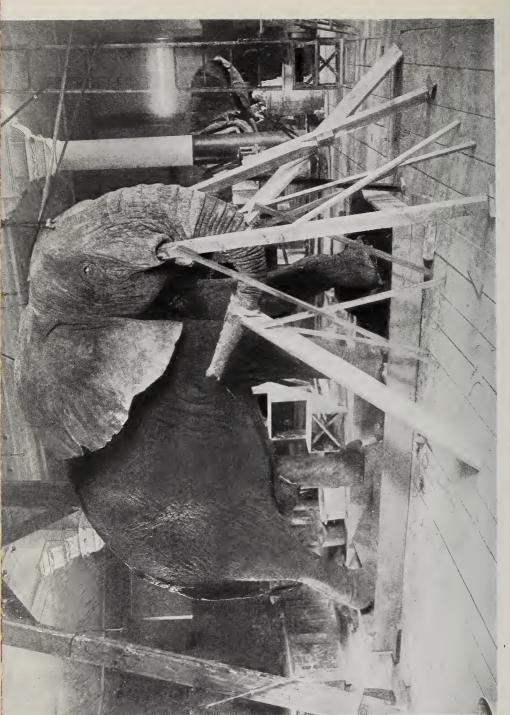
tic series during the year are many of unusual interest from the southeastern United States, such as the large soft-shelled turtle, the Florida terrapin, the Florida box turtle, the green tree snake, the diamond-back rattler, the southern pigmy rattler, the cotton-mouth, the coral snake and the scarlet king snake. Thus some of the most interesting species of North America are presented in their race relationships, supplementing their ecological relationships set forth in the Florida group.

There has been much satisfactory progress on the study collections of the department. A complete checking up and reidentification have been made of all the lizards of the collection and of all specimens of North American poisonous snakes. The collection of Desmognathus was studied and reidentified by Mr. Dunn during his recent revision of the genus. The same work has been done for the genus Plestiodon by Mr. Karl P. Schmidt. The amphisbænians of the collections have passed through the hands of Dr. Leonhard Stejneger in a study for the revision of the family.

The reference catalogue for reptiles has been completed to date, and a new locality catalogue has been instituted. The continual routine work of accessioning, cataloguing and identifying new material has been carried on. The storage collection of dry material has been recatalogued and placed on its permanent shelves. Work has been continued on the bibliography catalogue. In this connection the department library has accessioned some 300 additional separates, gifts of the herpetology departments in the various museums of the world.

A preliminary survey of the Congo collection reports 1,362 specimens of lizards (40 species, several new to science), and 804 specimens of snakes (70 species, a small proportion new). The collection affords large series, especially among the skinks, which will be of great value in defining species hitherto known from relatively few specimens. Mr. Karl P. Schmidt, of Cornell University, will work especially on the Congo collection of reptiles. Mr. Dunn has already completed his paper on the North Carolina collections made in the summer, which





DEPARTMENT OF MAMMALOGY.—YOUNG BULL ELEPHANT

One of the specimens of the African Elephant Group for the proposed African Hall which is being prepared by Mr. Carl E. Akeley. This is a successful demonstration of a new method in taxidermy

will be ready for publication as soon as the drawings are completed.

## MAMMALS AND BIRDS

## Department of Mammalogy and Ornithology

J. A. Allen, Curator

The activities of this department during the year 1916 have not been exceeded in importance by those of any other year in its history, although some previous years have witnessed greater increase in its material.

The additions to the mammal collection comprise 1,016 much needed specimens from Oregon and Washington, added by purchase; nearly 400 specimens from South America, mostly from Argentina, collected by Messrs. Leo E. Miller and Howarth S. Boyle, in continuation of the South American exploration work under the direction of Curator Chapman; about 500 bats and an important collection of fossil mammal material, collected by Assistant H. E. Anthony in the island of Porto Rico: about 200 mammals from western China, collected by Messrs. Andrews and Heller, forming the first consignment from the Asiatic Zoölogical Expedition of the American Museum, under the leadership of Assistant Curator Andrews. As usual, valuable specimens have been received in the flesh from the New York Zoölogical Society and the Department of Parks, among which may be mentioned a Siberian tiger, an ibex, two muskoxen, and several kangaroos (skins and skeletons of each) received from the Zoölogical Society. Among the more important accessions by gift are a Chillingham wild white bull, from the Hon. Walter Winans; an albino Virginia deer, presented by Archibald Harrison; a skin and skeleton of a moose from Ontario. Canada (collected by Assistant Anthony), presented by the Hon. George Shiras, 3d. Our thanks are also due to Brother Apolinar Maria for further very desirable specimens from the vicinity of Bogotá, Colombia.

The accessions to the bird collection comprise approximately

9,000 specimens, of which about 7,000 are from South America, about 400 from China, and the remainder from various sources, fully nine tenths of the whole having been received through Museum expeditions.

Four habitat groups of mammals have been placed on exhibition during the year, as follows: Black-tailed Jack-rabbit Group, Pack-rat Group, Rocky Mountain Goat Group, Colobus Monkey Group. A Red Howler (monkey) Group is nearly completed, and the Virginia Deer Group is well under way. A Night-hawk Group, a Domestic Pigeon Group and about 80 miscellaneous mounted specimens have been added to the exhibition series of birds.

A great event of the year is the provision of additional storage room for both birds and mammals. The preparation of space for the reception of a large number of metal Study storage cases of the best modern type has neces-Collections sarily thrown both collections into more or less confusion, which has been extended over a much longer period than was anticipated, as the contractors were unable to deliver the cases at the stipulated time. A part, however, have now been received and the rest doubtless will soon be delivered. Besides the addition of the new storage cases for the mammals, small cardboard boxes and trays are being provided for the skulls and skeletons of the small and medium-sized mammals, not only more effectually to protect them from dust but to prevent loss of parts in the case of disarticulated skeletons.

The cataloguing of both collections is well up to date, as is also the index catalogue of the mammals, great progress with the latter having been made during the last year. It is now expected that within the next few months the mammal collection will be placed in much safer condition than heretofore and that the osteological material will become, for the first time in the history of the department, conveniently available.

During the early part of the year, the Congo collection, received late in 1915, was unpacked and the specimens dis-

tributed to the various departments to which they relate. They were found to exceed in importance the first estimates, and in point of preservation, considering the long storage in tropical Africa, were a most pleasurable surprise to those most deeply interested in their scientific value. The 5,800 mammals (erroneously recorded in last year's report as 3,000) are now for the most part fully available for study, the greater part of the large skins having been tanned, and the skulls of the bats, of the insectivores and of a considerable portion of the rodents having already been cleaned and made available for use. The preparation of the skeletal material, however, is unfortunately lagging, through lack of facilities for early completion.

The fine collection of shrews (Soricidæ) was early assigned for elaboration to Mr. N. Hollister, of Washington, and his excellent report thereon has already been published in the Museum *Bulletin*. The identification of the bats has been about half completed by the Curator, and some other material has been assigned to specialists for investigation and report. Assistant Chapin, of the expedition, is making good progress with the birds, several papers having already been prepared and published; and an important paper by him on the weaver birds is awaiting publication.

Early in the year Assistant Curator Andrews organized the Museum's Asiatic Zoölogical Expedition, financed through contributions from Mr. and Mrs. Charles L. Bern-Field Work heimer, Mr. George T. Bowdoin, Mr. and Mrs. Sidney M. Colgate, Mr. Lincoln Ellsworth, Mr. James B. Ford, Mr. Childs Frick, Mr. Henry C. Frick, Mrs. Adrian Hoffman Joline and the Jesup Fund, for research in southern China and adjoining areas, and in March sailed for the East as its leader. He was joined later by Mr. Edmund Heller as chief assistant. Mr. Heller is an expert collector and explorer. He was with Colonel Roosevelt in Africa and is well known for his expeditions in Mexico, South America and elsewhere. The first instalments of birds and mammals have already been received, and late reports from the expedition indicate that its work is being prosecuted with excellent results. The expedition is expected to remain in the field for another year, and will doubtless do much to fill the great gap hitherto existent in the Museum's zoölogical collections from Asia.

Early in the summer Mr. H. E. Anthony was sent by the Museum to Porto Rico, to explore, in coöperation with the New York Academy of Sciences and the Porto Rican Government, the caves and kitchen middens of that island for the remains of extinct mammals, the presence there of such remains having been discovered by reconnaissances made by members of the Survey the previous year. Mr. Anthony's labors were amply rewarded in the discovery of several new genera of extinct mammals, of which preliminary descriptions have already been published by him in the Museum Bulletin and in the Annals of the Academy. He also obtained some 500 specimens of the bats of the island, mostly hitherto unrepresented in our collections, the bats forming the only indigenous living Porto Rican mammals.

The explorations directed by Curator Chapman in South America during the last six years have occupied a prominent place in the annual reports of this department. This work has not only been continued but has received increased impetus through his extended visit to South American countries during the present year. Dr. Chapman left New York May 6, reaching Guayaquil May 20, returning to New York November II. The objects of the expedition were: (I) to extend to new fields the work already inaugurated; (2) to collect material for habitat groups illustrating the bird life of the paramo of Mt. Chimborazo in Ecuador, and of the plains region of western Argentina; (3) to make an ornithological survey of the Urubamba Cañon in Peru; (4) to establish relations with the museums of the countries visited, and to secure their coöperation through field work and the exchange of specimens. Each of these purposes was satisfactorily accomplished. The route of travel was from Guayaquil to Quito and Mt. Chimborazo. Collections were made at various altitudes, from the paramo, or upper life zone, to the tropical life zone. to Guayaquil, the expedition proceeded to Mollendo, whence a trip was made to Cuzco and thence by mules to Lake Titicaca, collections being made on the tablelands north of the



DEPARTMENT OF MAMMALOGY AND ORNITHOLOGY
WHOOPING CRANE GROUP



lake, and later in the vicinity of Santiago, Chile, and at Mendoza and Buenos Aires in Argentina. On the return trip the Museu Paulista was visited in São Paulo, and the museum at Rio de Janeiro. Here a successful collecting trip was made to the Organ Mountains. Later, on the home voyage, several weeks were spent at the Island of Barbados.

Dr. Chapman was accompanied on the outward trip by Mr. George K. Cherrie, who, after remaining with the expedition through its active field work, crossed the continent to Buenos Aires, to resume field work along the Rio Paraguay, in continuation of the work of the Roosevelt Expedition of 1914, through financial aid furnished by Mr. Roosevelt and Mr. Dodge. In Argentina Dr. Chapman met Messrs. Miller and Boyle, who for the preceding nine months had been collecting at various points in that country. They have now returned to New York and are preparing for further work in South America.

In the last report of this department, brief reference was made to the work of Messrs. Miller and Boyle in Bolivia. This was successfully continued to the end of the year, including within its scope localities ranging in altitude from 13,000 feet to the tropical lowlands. At the beginning of the present year their activities were transferred to Argentina, where many important localities have since been carefully worked, with results of high importance, the department thereby receiving for the first time birds and mammals from this portion of South America.

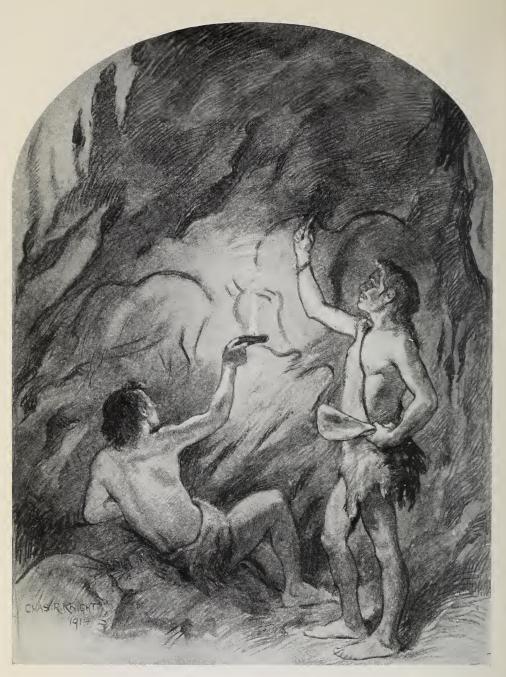
The Brewster-Sanford Expedition, in charge of Mr. R. H. Beck, has sent to the Museum, during the past year, important collections of birds from eastern South America and from the West Indies, to which latter region the work of the expedition has now been transferred.

Early in the year the Curator finished the identification of the South American mammals received prior to the closing months of the year 1915, and has since published in the Museum Bulletin summary reports on the collections received in recent years from Ecuador and Colombia and from the Roosevelt Brazilian Expedition; a special paper on the weasels of tropical America; papers describing new South

American mammals, and a paper (in the Annals of the New York Academy of Sciences) describing a new extinct genus of rodents from Porto Rico. For the immediate future the determination of the mammals of the Congo Expedition will have first claim upon his attention. Work upon the bats (about 1,000 specimens) is nearing completion. Assistant Anthony has published papers on the life habits of the mountain beaver (Atlodontia), on a collection of mammals from Panama and on new fossil mammals from Porto Rico. Early in the year Curator Chapman had so far finished the systematic portion of his work on the birds of Colombia that it was possible to have it put in type during his absence in South America; the introductory portion, dealing with the life zones and faunal distribution of the bird life of Colombia, is so nearly ready that the early publication of this important volume is assured. Mr. Cherrie has published several papers on new South American birds in the current volume of the Bulletin, but found it desirable to defer the publication of his report on the birds of the Roosevelt Expedition to Brazil till later, in order to include the results of further work in the same field, for which opportunity was provided by Mr. Roosevelt. Assistant Chapin is continuing his work on the birds of the Congo Expedition, some of the results of which have already appeared in the Museum Bulletin.

The publications of the department during the year comprise 23 papers (21 in the Bulletin of the Museum and 2 in the Annals of the New York Academy of Sciences), of which 14 relate to mammals and 9 to birds. The 21 articles published in the Bulletin aggregate 366 pages, with 90 text illustrations, 3 maps and 5 plates, as detailed below (p. 97) under "Publications." There has also been published a Bibliography of the Scientific Publications of the Curator; and a Supplement to Dr. D. G. Elliot's "Check List of Mammals of the North American Continent, the West Indies and the Neighboring Seas" is in press, from manuscripts left by Dr. Elliot, the means for its publication having been generously furnished by his daughter. In addition to the above, Assistant Curator Andrews has published a volume





DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

ARTISTS OF THE OLD STONE AGE

Study for a group in the Hall of the Age of Man

(through D. Appleton and Company) entitled "Whale Hunting with Gun and Camera," as a by-product of his eight years of field work in collecting Cetaceans for the Museum.

## EXTINCT VERTEBRATES

# Department of Vertebrate Palæontology

HENRY FAIRFIELD OSBORN, Curator Emeritus W. D. Matthew, Curator

The Museum continued its explorations in northwestern Montana for Cretaceous dinosaurs and, under the direction of Mr. Barnum Brown, secured a large collec-Field Expeditions tion, of which the most important specimen Purchases is the skeleton of a dwarf type of horned dinosaur discovered by Mr. Johnson of Mr. Brown's party. Important evidence was noted as to the succession of the formations and the evolution of the Cretaceous dinosaur fauna. A second expedition, in charge of Mr. Walter Granger, continued the search for Paleocene and Eocene mammals in New Mexico and Colorado and obtained a valuable collection, including a skull, jaws and partial skeleton of an animal related to Tillotherium, a rare and peculiar Eocene mammal. This specimen was found by Mr. George Olsen of Mr. Granger's party. The third expedition, in charge of Mr. Albert Thomson, was engaged chiefly in reconnaissance work in the Miocene and Pliocene formations of western Nebraska, and also continued operations in the great fossil quarry at Agate, Nebraska. Dr. Matthew joined this party in the field during June and July and Professor Osborn in September. A considerable collection of fossil mammals was obtained by this expedition, and in addition two skeletons of Pliohippus, one found by Mr. Harold J. Cook, the other by Mr. E. L. Troxell. were purchased for the Museum. These represent the Pliocene stage of the Evolution of the Horse, known hitherto only from fragmentary specimens. The most important discovery of the season was made by Mr. William Stein during a short collecting trip for the Museum in the Eocene of the Big Horn basin, Wyoming. This is a nearly complete skeleton of a gigantic fossil bird, equaling the extinct Moa of New Zealand in bulk.

but having a huge head and high compressed beak. This is believed to be one of the four or five most important scientific discoveries among fossil birds yet made, and will be of great popular interest when prepared and placed on exhibition.

The complete skeleton of the Horned Dinosaur Monoclonius has been installed in the Dinosaur Hall, and a partial skeleton showing considerable portions of the skin is placed temporarily in the case opposite the elevator. A third skeleton is in course of preparation. A number of other important specimens of Cretaceous dinosaurs have been prepared during the year; the reinstallation of the wall-case exhibits on the north side of Dinosaur Hall has been completed and the greater part of the collection of fossil turtles on the south side of the hall remounted and relabeled.

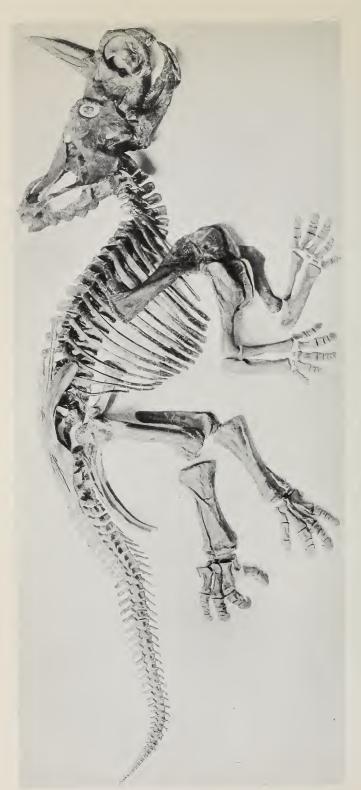
The most important addition in the Tertiary Mammal Hall is the fine skeleton of the Californian Sabre-tooth Tiger, presented by the University of California and mounted during the past year.

The preparation of the series of skeletons of the great Clawed Ungulate *Moropus* from the Agate fossil quarry has been completed, and four of the most perfect skeletons will be selected for a group in the center of the Tertiary Mammal Hall, the remainder reserved for study, sale or exchange.

The collections in the large dinosaur storage room have been thoroughly overhauled and rearranged in systematic order, so as to be fully accessible and readily handled and laid out when required for study. Considerable progress has been made in revising and condensing the arrangement of the fossil mammal collections.

The new storage arrangements have facilitated the monographic studies upon the great Jurassic Dinosaur Camarasaurus, undertaken under Professor Osborn's direction by Mr. C. C. Mook. Professor Osborn has also continued his studies upon the Titanotheriidæ and Equidæ and upon certain carnivorous dinosaurs. Dr. Matthew and Mr. Granger have continued their





DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

Monoclonius

A Cretaceous Horned Dinosaur from Alberta, Canada. Skeleton recently placed on exhibition

revision of the Lower Eocene fossil mammal faunas, Dr. Gregory his researches upon the Evolution of the Primates and Mr. Brown upon Cretaceous dinosaurs. Eight articles in the American Museum *Bulletin* represent the completed portions of these researches.

The extent to which the work of this department has served to advance scientific knowledge of fossil vertebrates, and to place our conclusions as to the history of life Popularizing the on the earth upon a broader and more safe Museum's Work foundation, is very imperfectly realized as yet, even by the scientific world. The specialists, busied in their researches, have hardly taken time to look up and survey the progress of the past twenty-five years. The writers who cover a broader field and aim to present the results of investigations to schools and colleges or to the general public are apt to obtain a very imperfect or erroneous notion of what these investigations really mean. It is too often considered beneath the dignity of the specialist to write popular articles, or it is thought that anyone with a superficial knowledge of the subject can do this kind of work. On the contrary, it would seem that to disseminate widely interesting and at the same time accurate information is the most difficult but the most important part of the Museum's work. It should be understood that the popular or semi-popular books and articles issued by the staff involve a great amount of research and preparation and aim to be as accurate as present knowledge permits. The principal contribution of this sort published during the year is the series of articles by Professor Osborn in the Scientific Monthly entitled "The Origin and Evolution of Life on the Earth," issued in book form by Charles Scribner's Sons. A number of articles and notes in the American Museum Journal by Dr. Matthew and others have also been published, and several guides and handbooks upon the collections are under way.

## EXISTING AND EXTINCT RACES OF MEN

# Department of Anthropology

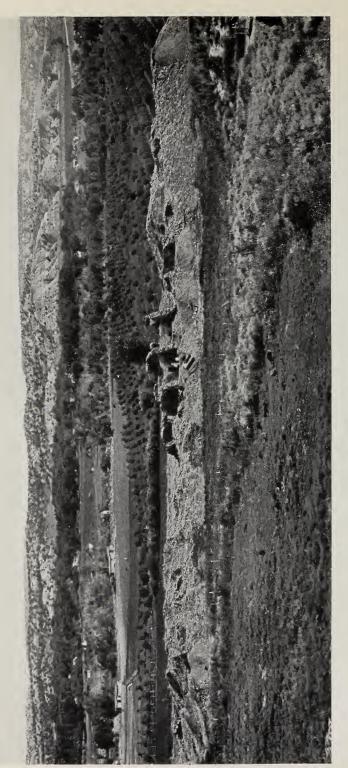
CLARK WISSLER, Curator

A number of small collections were presented during the year, the full list of which will appear under the appropriate head. Ex-President Theodore Roosevelt presented Acquisitions a type series of stone implements from the Carib Indians, and G. Whitfield Smith, Grand Turk, B. W. I., some interesting skeleton material from caves in the islands. Ralph Curtis gave an unusually fine series of paleolithic chipped implements, some of which have secondary ornamental workings. Mr. G. C. Longley enriched his Jamaica collection by a number of interesting specimens from the District of Vere, Island of Jamaica. Among the most notable of these specimens are pestles and pendants of clay and stone, beads, a number of celts, and some decorated potsherds. Finally, acknowledgment should be made to Mrs. Mary E. K. Turner for donating a collection of early hafted stone implements from the Alaskan Eskimo. These were given in the name of the late Dr. John B. Driggs.

Among the purchases from the Jesup Fund is a large series of archæological specimens from Las Matas, Venezuela; a general collection from the natives of New Guinea, and several important lots of Indian specimens from the Penobscot, Cheyenne, Eskimo, Tsimshian, etc. Collections resulting from field-work were from the Goajiro and Parahuana Indians of Venezuela, the Hopi, Zuñi, Pawnee and Crow; also archæological collections from Aztec, Zuñi, Bonito and Kentucky, in the United States, and from Porto Rico and Venezuela.

The major problem of the season was the coördination of historical and archæological research in southwestern United States, supported by Messrs. Archer M. Huntington and J. P. Morgan. Early in the year a concession was received from Mr. H. D. Abrams, the owner of the "Aztec" ruin near the town of Aztec, New Mexico. This is a pueblo ruin to which the term Aztec is applied erroneously,





DEPARTMENT OF ANTHROPOLOGY

EXCAVATION OF THE AZTEC RUIN

One of the finest examples of prehistoric Pueblo architecture in the Southwest

it being of the same general type as Bonito, excavated by the Hyde Expedition of some years ago. This season at Aztec was in the main preliminary. The site was cleared of vegetation and drift and the standing walls sounded. Those showing weakness were strengthened with cement to prevent collapse when the supporting debris was removed. In addition, thirty-four rooms were cleared in the east wing. This ruin promises to be one of the most important in the Southwest. The work was supervised by Assistant Curator Nelson, but under the immediate direction of Mr. Earl H. Morris of the University of Colorado.

Another special problem was the chronological investigation of the Zuñi region by Professor A. L. Kroeber of the University of California, and Assistant Curator Nelson and Assistant Leslie Spier of the American Museum. Professor Kroeber continued his work of last year upon the social and town organization of the surviving Zuñi, and in coöperation with him Mr. Spier made excavations in Zuñi and the neighboring sites. The result of this one season's work is a fairly satisfactory chronological grouping of the sites around Zuñi.

Assistant Curator Nelson made a general survey of the little-known sites west of the Rio Grande, particularly in the valley of the Puerco; the results when published will more definitely define the distribution of pueblo culture.

Another important problem is the survey of Porto Rico under the auspices of the New York Academy of Sciences and the Porto Rican Government. The field work was directed by Assistant Curator Spinden, who early in the year visited Venezuela, a preliminary archæological survey of the most promising sections of which gives a tentative chronological classification of the prehistoric culture, which will serve as a point of departure for more intensive work in the islands. Later, in Porto Rico, special attention was given to ceramics and stratigraphic work in shell deposits. The sections made reveal in a satisfactory way the chronology of the island's culture. A summary of the results was given at the last Annual Meeting of the New York Academy of Sciences.

Finally, we come to field work among the surviving natives of North America. Curator Goddard investigated the White

Mountain Apache, securing new data on their social organization; Associate Curator Lowie continued his study of the Hopi in Arizona; Curator Wissler worked among the Pawnee and Dr. Gilbert L. Wilson among the Hidatsa.

All the above investigations have developed new problems and discoveries, offering opportunities of the most enticing kind. It is hoped that sufficient support may be given our staff to follow up these advantages, rather than to leave them to others.

In the department's own laboratories important work is under way. The appointment of Mr. Louis R. Sullivan as assistant in somatology has led to the equipment of a special laboratory. In addition to the routine work involved in such construction, Mr. Sullivan began the investigation of the human hair as a classificatory character and also a study of certain modifications in the skeleton due to function. Preliminary reports upon these subjects will be published in the near future.

Professor J. H. McGregor, research associate in somatology, is making a special study of Neanderthal man, in connection with which a number of important restorations are under construction.

Mr. M. D. C. Crawford, the Research Associate in Textiles, completed his studies of Peruvian fabrics, the final section of which has just been published. Assistant Curator Mead has issued the results of his detailed analysis of Peruvian art. Curator Goddard is engaged in genetic studies upon Athapascan phonetics and languages, while Curators Wissler and Lowie have made the final chronological analysis of Plains Indian societies based upon the systematic field survey undertaken several years ago.

A number of local students are engaged upon problems of their own, but more or less under the direction of our staff. Among these, mention may be made of Miss Helen H. Roberts's studies of native Indian music and Dr. H. K. Haeberlin's exhaustive study of the Salish collections. It is gratifying to be able to report such use of our facilities, and it seems desirable that further provision be made for the proper accommo-





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DEPARTMENT OF ANTHROPOLOGY
WELCOMING CEREMONY OF THE BELLA COOLA INDIANS
One of the murals by Will S. Taylor for the Northwest Coast Hall

dation of such serious local students as may find their problems in our collections. We are particularly in need of some equipment for facilitating the work of serious students of primitive art and designing, for this is one of the angles from which we can best serve a large interest in the community.

Under the general supervision of Curator Goddard the development of the exhibition halls has been satisfactory. large habitat group for the Apache, a compan-Habitat Groups ion to the great Hopi group completed last year. and Murals is in the final stages of construction and should be ready for presentation early next year. The artists are Mr. Howard McCormick and Mr. Mahonri M. Young. The Jesup North Pacific Hall has been improved by removing the Eskimo collections to the adjoining corridor and extending the magnificent collections from the Coast tribes to all parts of the hall. This makes a unitary treatment possible. Mr. Will S. Taylor has completed the last of the side-wall panels. These paintings represent twelve typical cultural scenes: Securing Whales for Food-Nootka; Salmon Fishing-Kwakiutl; Gathering Bark for Food-Bella Coola; Preparing Fish Oil-Tsimshian; Building a Canoe-Haida; Weaving a Blanket-Tlingit; Dancing to Cure the Sick-Tlingit; House-Building Ceremony-Haida; Dog-Eating Ceremony-Tsimshian; Welcoming Visitors—Bella Coola; Potlatch Ceremony -Kwakiutl: A Betrothal-Nootka. These are in fact equivalent to an equal number of habitat groups, for they give not only typical phases of cultural activity but faithfully reflect the geographical environment in which these interesting Indians worked out their careers.

A special donation by Mr. Percy R. Pyne provided for the preliminary work upon a large New Zealand habitat group, in which will be shown a fortified village with its natural settings and home life. Miss Frances Del Mar, one of the artists engaged for this work, went this year to New Zealand, where sketches and studies were made covering the phases of native life needed in the composition. We are ready to proceed with the construction as soon as the proper authorization is given.

Our general collections have been made far more useful than heretofore by the increase of large tribal labels each with its distribution map. Almost every geographical unit in our halls now has its general topical label, from which the visitor may, if he wishes, get the bearing and place of the exhibit in the subject as a whole.

Two special exhibits, occupying one small case each, have been arranged in the Hall of the Woodland Indians to present in compact form two typical synthetic studies. One deals with agriculture in the New World, showing the range of plant life domesticated by the natives and the geographical distributions of the different types. The other deals with the influence of form upon the style of decoration, presenting concrete cases of the natural objective development of design types resulting from the structural patterns in moccasins. Though these exhibits occupy relatively small space, they represent more research and far broader knowledge than many of our largest presentations.

The demands upon our reserve and study collections have been unusual. Developments in this line have so far outstripped our physical expansion that we have neither the space nor the necessary assistance to meet all the legitimate calls. This is truly a misfortune, for if our work has any justification at all, it is in providing reference material to every serious student who calls. The chief cause of our delinquency in this case is that, while the city and the people's interest in the Museum have grown, the facilities of the department have not been augmented.

The usual January lectures dealing with the methods and interpretations of anthropological data were given by Curator Goddard and Associate Curator Lowie. The subject this year was the culture classification of North American natives. A special series of four lectures on primitive textile art was given in October by the Curator, assisted by Assistant Curator Herbert J. Spinden and Mr. M. D. C. Crawford, Research Associate in Textiles. Both courses were well attended.

Ten scientific papers were published during the year in the

Anthropological Papers, by members of the department staff. A full list of these articles will
be given under the head of Publications.

## ANATOMY AND PHYSIOLOGY

# Department of Anatomy and Physiology

RALPH W. Tower, Curator

Early in the year it was decided to make an exhibit by models of the development of the mammalian red blood corpuscles. Living cultures of blood-forming tissues were made for the purpose of observing and recording the successive stages in the production of the red cells—with the result that the activities observed did not agree with the modern theories and descriptions. Instead of seeing a small nucleated cell remodel itself into a non-nucleated disk by extruding its nucleus, we observed this same cell push out from its nucleus round, straw-colored buds which finally floated off as true red corpuscles. White cells of the lymphocyte series performed the same function, and it is undoubtedly this process which has been described as phagocytosis by most investigators during the last 70 years. The idea of phagocytosis of red corpuscles has remained unchallenged, since no method up to the present time has been found by which it could be determined whether the enclosed corpuscles were being devoured or being manufactured. By extended observations on the living tissue it appears that the process is one of production of the red blood corpuscle and not one of phagocytosis. The results of these experiments show that:

- 1. The red blood corpuscle of the mammal is the result of nuclear budding and does not pass through a nucleated stage.
- 2. The red blood corpuscle of the bird, which is nucleated, is phylogenetically identical with the parent "normoblast" form of the mammal.
- 3. Phagocytosis of the red cells by the giant cells in normal blood-forming tissue is not common, if it exists at all.

The department has mounted several interesting and unique skeletons for exhibition; these are: a Hoatzin, a Sphenodon, a Muskrat, a Seal, a Genet and a Sloth.

Aside from these, there have been prepared 3,126 skulls and 73 complete skeletons, including 12 Okapi and 1 Giraffe.

### PUBLIC HEALTH

# Department of Public Health

CHARLES-EDWARD AMORY WINSLOW, Curator

The section of the Hall of Public Health dealing with insectborne diseases has been brought to a state of practical completion after nearly four years of work. **Exhibits** mosquito exhibit have been added models showing various practical methods of mosquito control (such as ditching, oiling of streams, protection of receptacles in the neighborhood of houses and destruction of larvæ and adult mosquitoes), and models, charts and an oil painting illustrating the story of the triumph of American sanitation on the Isthmus of Panama. Material has been collected for a habitat group of the mosquito and its enemies, which is to be prepared during the coming year. The section dealing with flies and fly control has been enriched by a series of actual specimens and beautiful colored drawings of various types of flies found in houses, prepared by Mr. L. V. Coleman. Two new wall cases have been installed, containing a rather complete exhibit dealing with sleeping sickness and relapsing fever and with the tsetse flies and ticks which carry the germs of these diseases. These include specimens of the flies and ticks, photographs and charts illustrating the diseases and their prevalence, and models which show how the flies and ticks are controlled in Africa by clearing the jungle and burning infested villages.

The Museum and the Department suffered a severe loss during the year in the death of Mr. Ignaz Matausch, who prepared the remarkable giant models of insect-carriers of disease now on exhibition in the Hall of Public Health, and who at the time of his death was engaged on a model of the yellow fever mosquito, Aëdes calopus. We have been fortunate, how-

ever, in securing the services of Dr. B. E. Dahlgren, who is now at work on a new model of this insect.

The water supply and sewage disposal section of the Public Health exhibit has been extended and kept up-to-date through the preparation by Mr. Otto Block of models of the Albany water filter, of a modern chlorin disinfecting plant, of several of the newer devices for sewage treatment, and through the addition of charts illustrating the pollution of New York Harbor and the plans which have been made for its purification.

The entire Hall of Public Health has been rearranged, under the immediate direction of Mr. Coleman, so as to make its sequence more logical and its general appearance more attractive.

In connection with the Convocation Week meetings of the American Association for the Advancement of Science, in December, a special exhibit was prepared illustrating the life and work of Louis Pasteur.

The next section of the Hall of Public Health which it is planned to work out is that dealing with Food. A comprehensive outline has been prepared to cover the food needs of mankind, the nature and sources of our food supply, the food habits of primitive peoples, the improvement of food products by the application of biological science, the transportation and handling of foods, the relationship of food to disease and the economic and hygienic aspects of the dietary. Work has already been begun by Dr. Hull on the preparation of a series of charts illustrating the world movements of food products, and models of various typical foods illustrating their calorific value are in process of construction.

The Museum of Living Bacteria has had an unusually successful year and continues to fill a unique place in the service of pure and applied bacteriology. Seventy-two new strains have been added, making the total number now under cultivation 716. During the year ending December 1, 1916, 3,929 cultures were sent without charge to laboratories of universities and health departments, making a total of 15,145 cultures distributed since the opening of the laboratory in 1911. Eighty-four new institu-

tions have availed themselves of our service during the year, making 492 in all.

The Department has continued to coöperate with the Department of Public Education of the Museum in the preparation of material for the use of New York City schools, illustrating the methods of bacteriology and the control of insect-borne diseases. Classes from medical schools, schools of nursing, normal schools and colleges are visiting the Hall of Public Health in increasing numbers, and lectures have been given to many such classes during the year.

The year has been a fruitful one in research. The staff has coöperated in a systematic study of the typhoid and allied groups of bacteria, the results of which are now being prepared for publication. The Curator has prepared for the Society of American Bacteriologists a general review of the wider problems of bacterial classification and a new outline of families and genera which was presented at the meeting of the Society in December. Dr. Kligler has published several important contributions to bacterial classification and physiology, and Dr. Hull has nearly completed an exhaustive statistical study of the recent outbreak of infant paralysis in comparison with those of earlier years in this and other countries.

- Dr. I. J. Kligler, after four years of untiring service, resigned in October to accept an important position in the Rockefeller Institute for Medical Research. The successful organization of the Museum of Living Bacteria is due chiefly to Dr. Kligler, and his enthusiasm, knowledge and insight have been a constant source of inspiration to all who have been associated with him.
- Mr. L. V. Coleman has also left the Department, to take a Fellowship at Yale University. During the year that he was connected with the Museum, he displayed a real genius for the art of exhibition, and he has contributed materially to the development of the Hall of Public Health.

Thomas G. Hull, Ph.D. Yale, 1916, has been appointed Assistant in the Department, with special responsibility for the exhibition work, while Mr. William Rothberg, who has assisted Dr. Kligler for four years, will have direct charge of the bacterial collection, under the general supervision of Dr. Hull.

### THE LIBRARY

## Department of Books and Publications

RALPH W. Tower, Curator

The year just past has proved for the Library an unusually busy and memorable one. To the Library, perhaps more than to any other department in the institution, the European war has come as a direct and disturbing influence, exceedingly hampering both the maintenance of the periodical files and the acquisition of new material. The publications usually received from the belligerent nations have either arrived at most irregular intervals, or have not come to hand at all. Foreign periodicals received on subscription have failed to be delivered, in many cases leaving the subscriber doubtful whether his order was ever delivered, or if delivered whether the publication in question appeared in sufficiently ample edition to admit of distribution in America. These delays, plus the unavoidable losses in shipping and the natural and far deeper loss to science, make it inevitable that the year should present a dreary aspect in our international files of scientific literature.

On the other hand, through the generosity of the Trustees and individual donors, the Library has come into the possession of an exceptional number of important and valuable books. By gift of Mr. Ogden Mills was acquired an original manuscript by Titian Ramsey Peale, entitled "The Butterflies of North America, Whence they Come, Where they Go, and What they Do." This work has never yet been published, with the possible exception of a single small instalment which seems to have appeared in 1883. The manuscript consists of nearly four hundred pages of descriptive matter and is accompanied by three volumes of original colored drawings made by Mr. Peale. Mr. Mills's

generosity is further exemplified by the gift to the Library of a very handsome two-volume copy of the first edition in Latin of the "Peregrinationes in Indiam Occidentalem" by Theodorus de Bry (1590–1602), and the following three classical works by John Gould in five folio volumes each: "The Birds of Europe" (1832–1837); "The Birds of Great Britain" (1862–1873), and "The Birds of New Guinea and the Adjacent Papuan Islands" (1875–1888). President Henry Fairfield Osborn has also subscribed in the name of this Library for a de luxe edition of Dawson's "Birds of California," a work promising to be of the utmost scientific value as a contribution to the ornithology of the Pacific Coast.

Other acquisitions of importance are:

Archives de Biologie, Tomes I-XXVIII.

Archives des Missions Scientifiques et Littéraires, 1873-1899.

Broteria: Revista Luso-Brazileira, Volumes I-XIV.

Commentarii Academiæ Scientiarum Imperialis Petropolitanæ, 1726–1806.

L'Échange: Revue Linnéenne, I-XI, XV-XXXI.

The Field (English), a complete file.

International Catalogue of Scientific Literature, complete file for the following subjects: Anatomy, Anthropology, Bacteriology, General Biology, Geography, Geology, Mineralogy and Physiology.

Morphologische Arbeiten, Bände I-VIII.

Proceedings of the Society for Experimental Biology and Medicine, Volumes I-XIII.

Transactions of the Berwickshire Naturalists' Club, Volumes I–XXII.

The Thompson Yates and Johnston Laboratories Reports, Volumes I-VII.

Fayrer, J., "Thanatophidia of India," 1874.

Gould, J., "Icones Avium," 1837-1838.

Stein, Fr., "Der Organismus des Infusionsthiere," 3 Volumes, 1859–1883.

Tongue, M. H., "Bushman Paintings."

Tutt, J. W., "Natural History of British Lepidoptera," in 8 Volumes.

There have been several changes during the year in the personnel of the Library staff. Miss Gertrude Jarman, after some six years of admirable work in the Library, left in June, and her loss has been felt universally as a distinct one from a working as well as a personal point of view. Miss Amy Hepburn was appointed to fill the position left vacant by Miss Jarman's resignation and began work in July. furthermore has seen the creation of a new position, that of assistant in publications, to which Mr. George Chamberlain has been transferred from his former position as library assistant. Mr. Chamberlain had already had considerable experience in this work while engaged in the Library, and this separation of the two rapidly growing departments necessarily will prove most advantageous. Miss Hazel A. Gav. a recent graduate of the Library School of Columbia University, was appointed library assistant in June to fill Mr. Chamberlain's position.

The Osborn Library of Vertebrate Palæontology has distributed to the exchanges Volume V of Fossil Vertebrates in

Osborn Library of Vertebrate Palæontology The American Museum of Natural History. Volume VI of the same series is in preparation. A Bibliography of the Published Writings of Edward Drinker Cope, 1859–1915, has

been compiled by Miss Jannette M. Lucas from the unpublished manuscript of Anna N. Brown, the Catalogue Chronologique des Publications de Edward Drinker Cope by Persifor Frazer, and the Bibliography and Catalogue of Fossil Vertebrates of North America by O. P. Hay. This work included the verification of each title, the correction of dates and the addition of new titles. The manuscript will be annotated and issued as a publication of the American Museum of Natural History.

## **PUBLICATIONS**

## J. A. Allen, Editor

The current volume of the Bulletin (Vol. XXXV) consists of 808 pages, 27 plates (1 colored), 3 maps and 212 text figures. The 42 articles represent 29 contributors.

Parts of seven volumes of the Anthropological Papers have appeared, aggregating 533 pages, with 204 text figures and 12 plates. Other technical papers include Volume I of "A Bibliography of Fishes" (730 pages); a volume of 228 pages, entitled "Autobiographical Notes and a Bibliography of the Scientific Publications of Joel Asaph Allen"; Volume I (New Series) of the Memoirs has been completed by the addition of Table of Contents and Index. The volume comprises 514 pages, 57 plates and 135 text figures.

The popular publications comprise the Forty-seventh Annual Report of the Trustees; Volume XVI of The American Museum Journal (edited by Miss Mary C. Dicker-Popular Son); Guide Leaflet No. 44; a second edition of Guide Leaflet No. 28; Part I of Teachers' Handbook to the Exhibitions and Collections in the American Museum of Natural History; and Guide to the Nature Treasures of New York City.

The technical and popular publications of the Museum, upon which \$45,754.26 has been expended during the past year, bring a large return to the Museum Library, through exchange for the publications of other scientific organizations, and are thus an important source of increase for the Library.

Following is a detailed list of the technical papers and other publications of the Museum, during 1916, arranged by departments:

#### DEPARTMENT OF INVERTEBRATE ZOÖLOGY

William Morton Wheeler. "Ants Collected in British Guiana by the Expedition of the American Museum of Natural History during 1911." Bull. XXXV, pp. 1-14.

Charles H. T. Townsend. "New and Noteworthy Brazilian Muscoidea Collected by Herbert H. Smith." Bull. XXXV, pp. 15-22.

- J. Bequaert. "Parasitic Muscid Larvæ Collected from the African Elephant and the White Rhinoceros by the Congo Expedition." Bull. XXXV, pp. 377-387, 3 text figs.
- Frank E. Lutz. "The Geographic Distribution of Bombidæ (Hymenoptera), with Notes on Certain Species of Boreal America." Bull. XXXV, pp. 501-521, 2 text figs.
- Charles W. Leng and Andrew J. Mutchler. "Descriptive Catalogue of West Indian Cicindelinæ." Bull. XXXV, pp. 681-699, pl. xii.
- Charles T. Brues. "Three New Species of Evaniidæ." Bull. XXXV, pp. 717-720, I text fig.
- Henry L. Viereck. "New Species of the Bee Genus Andrena in the American Museum of Natural History." Bull. XXXV, pp. 729-732.

### DEPARTMENT OF ICHTHYOLOGY AND HERPETOLOGY

- John Treadwell Nichols. "On a New Race of Minnow from the Rocky Mountains." Bull. XXXV, p. 69.
- John Treadwell Nichols. "A New Gymnachirus from North Carolina." Bull. XXXV, pp. 71-72, I text fig.
- L. Hussakof. "The Lungfish Remains of the Coal Measures of Ohio, with Special Reference to the Supposed Amphibian Eurythorax of Cope." Bull. XXXV, pp. 127–133, 7 text figs.
- L. Hussakof. "A New Pycnodont Fish, Cαlodus syriacus, from the Cretaceous of Syria." Bull. XXXV, pp. 135-137, 2 text figs.
- Raymond C. Osburn and John Treadwell Nichols. "Shore Fishes Collected by the 'Albatross' Expedition in Lower California with Descriptions of New Species." Bull. XXXV, pp. 139-181, 15 text figs.
- Russell J. Coles. "Natural History Notes on the Devil-fish, Manta birostris (Walbaum) and Mobula olfersi (Müller)." Bull. XXXV, pp. 649-657, 5 text figs.
- Mary C. Dickerson. "Description of a New Amphisbænian Collected by the Late Dr. Charles S. Mead in 1911, on the Isle of Pines, Cuba." Bull. XXXV, pp. 659-662, 2 text figs.
- Bashford Dean. "A Bibliography of Fishes. Vol. I. Authors' Titles A-K," 730 pages. (Special Publication.)

#### DEPARTMENT OF MAMMALOGY AND ORNITHOLOGY

- James P. Chapin. "Four New Birds from the Belgian Congo." Bull. XXXV, pp. 23-29, 4 text figs.
- Robert Cushman Murphy. "Notes on Subantarctic Cormorants." Bull. XXXV, pp. 31–48, 13 text figs.
- J. A. Allen. "The Proper Generic Names of the Macaques." Bull. XXXV, pp. 49-52.

- H. E. Anthony. "Habits of Aplodontia." Bull. XXXV, pp. 53-63, 8 text figs.
- Robert Cushman Murphy and Francis Harper. "Two New Diving Petrels." Bull. XXXV, pp. 65-67.
- James P. Chapin. "The Pennant-Winged Nightjar of Africa and its Migration." Bull. XXXV, pp. 73-81, 2 text figs.
- J. A. Allen. "New South American Mammals." Bull. XXXV, pp. 83-87.
- J. A. Allen. "The Neotropical Weasels." Bull. XXXV, pp. 89-111.
- J. A. Allen. "List of Mammals Collected for the American Museum in Ecuador by William B. Richardson, 1912–1913." Bull. XXXV, pp. 113–125.
- George K. Cherrie. "Some Apparently Undescribed Birds from the Collection of the Roosevelt South American Expedition." Bull. XXXV, pp. 183-190.
- J. A. Allen. "List of Mammals Collected in Colombia by the American Museum of Natural History Expeditions, 1910–1915." Bull. XXXV, pp. 191–238, with map.
- H. E. Anthony. "Panama Mammals Collected in 1914–1915." Bull. XXXV, pp. 357–376, 5 text figs. and map.
- George K. Cherrie. "Two New Birds from Venezuela." Bull. XXXV, p. 389.
- George K. Cherrie. "New Birds from the Collection of the Collins-Day Expedition to South America." Bull. XXXV, pp. 391-397.
- J. A. Allen. "New Mammals Collected on the Roosevelt Brazilian Expedition." Bull. XXXV, pp. 523-530.
- T. D. A. Cockerell. "The Auditory Ossicles of Aplodontia." Bull. XXXV, pp. 531-532, 3 text figs.
- W. E. Clyde Todd. "On Dysithannus mentalis and its Allies." Bull. XXXV, pp. 533-560, 4 text figs.
- J. A. Allen. "Mammals Collected on the Roosevelt Brazilian Expedition, with Field Notes by Leo E. Miller." Bull. XXXV, pp. 559-610, 6 text figs.
- N. Hollister. "Shrews Collected by the Congo Expedition of the American Museum." Bull. XXXV, pp. 663-680, pls. vii-ix.
- H. E. Anthony. "Preliminary Diagnosis of an Apparently New Family of Insectivores." Bull. XXXV, pp. 725-728, pl. xxiii.
- Charles Haskins Townsend. "Scientific Results of the Expedition to the Gulf of California in Charge of C. H. Townsend, by the U. S. Fisheries Steamship 'Albatross' in 1911. Commander G. H. Bur-

- rage, U. S. N., Commanding." Bull. XXXV, pp. 399-476, 45 text figs. and map. I. "'Albatross' Expedition to the Gulf of California in 1911."
- "Autobiographical Notes and a Bibliography of the Scientific Publications of Joel Asaph Allen," 228 pages, illustration. (Special Publication.)

#### DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

- William K. Gregory. "Studies on the Evolution of the Primates. Part I. The Cope-Osborn 'Theory of Trituberculy' and the Ancestral Molar Patterns of the Primates. Part II. Phylogeny of Recent and Extinct Anthropoids with Special Reference to the Origin of Man." Bull. XXXV, pp. 239-355, I colored plate, 55 text figs.
- W. D. Matthew. "A Marsupial from the Belly River Cretaceous. With Critical Observations upon the Affinities of the Cretaceous Mammals." Bull. XXXV, pp. 477-500, pls. ii-vi, 4 text figs.
- D. M. S. Watson. "On the Structure of the Brain-Case in Certain Lower Permian Tetrapods." Bull. XXXV, pp. 611-636, 11 text figs.
- D. M. S. Watson. "Reconstruction of the Skulls of Three Pelycosaurs in the American Museum of Natural History." Bull. XXXV, pp. 637-648, 7 text figs.
- Barnum Brown. "A New Crested Trachodont Dinosaur, Prosaurolophus maximus." Bull. XXXV, pp. 701-708, 5 text figs.
- Barnum Brown. "Corythosaurus casuarius: Skeleton, Musculature and Epidermis." Bull. XXXV, pp. 709-716, pls. xiii-xxii.
- Henry Fairfield Osborn. "Two New Oligocene Titanotheres." Bull. XXXV, pp. 721–724, 2 text figs.
- Henry Fairfield Osborn. "Skeletal Adaptations of Ornitholestes, Struthiomimus, Tyrannosaurus." Bull. XXXV, pp. 733-771, pls. xxiv-xxvii.

#### DEPARTMENT OF ANTHROPOLOGY

- P. E. Goddard. "The Beaver Indians." Anthrop. Papers, X, pp. 201-293, 19 text figures.
- Robert H. Lowie. "Societies of the Kiowa." Anthrop. Papers, XI, pp. 837-851.
- Clark Wissler. "General Discussion of Shamanistic and Dancing Societies." Anthrop. Papers, XI, pp. 853-876.
- M. D. C. Crawford. "Peruvian Fabrics." Anthrop. Papers, XII, pt. iv, pp. 105-191, 40 text figures.
- Charles W. Mead. "Conventionalized Figures in Ancient Peruvian Art." Anthrop. Papers, XII, pp. 193-217, pls. i-viii.

- Clark Wissler. "Harpoons and Darts in the Stefánsson Collection." Anthrop. Papers, XIV, pp. 397-443, 44 text figures.
- Clark Wissler. "Structural Basis to the Decoration of Costumes Among the Plains Indians." Anthrop. Papers, XVII, pp. 93-114, 12 text figures.
- Mary Lois Kissell. "Basketry of the Papago and Pima." Anthrop. Papers, XVII, pp. 115-264, 81 text figures.
- A. L. Kroeber. "Zuñi Potsherds." Anthrop. Papers, XVIII, pp. 1-37, 2 text figures.
- George T. Emmons. "The Whale House of the Chilkat." Anthrop. Papers, XIX, pp. 1-33, pls. i-iv, 6 text figs.

#### POPULAR PUBLICATIONS

- "Forty-seventh Annual Report of the Trustees," 194 pages, 16 plates.
- "The American Museum Journal," Volume XVI.
- "General Guide to the Exhibition Halls." Guide Leaflet No. 44, 136 pages, numerous illustrations.
- "Teachers' Handbook to the Exhibitions and Collections in The American Museum of Natural History. Part I, The North American Indian Collections, Their Use in Elementary English, History and Geography and in High School History and Economics," by Ann E. Thomas, 36 pages, numerous illustrations.
- "The Habitat Groups of North American Birds," by Frank M. Chapman. Guide Leaflet No. 28, Second Edition, 64 pages, numerous illustrations.
- "Guide to the Nature Treasures of New York City," prepared by George N. Pindar, 282 pages, numerous illustrations.

### GENERAL SUMMARY

In the foregoing reports of general progress and in the succeeding reports of the Treasurer and of the Secretary, the Trustees, the Members and the Scientific and Administrative Staffs are seen to be coöperating harmoniously to build the Museum on ever firmer and broader foundations, and to advance the great objects for which the Museum received its charter in 1869, namely, to establish and maintain in the City of New York a Museum and Library of Natural History, to encourage and develop the study of Natural Science, to advance the gen-

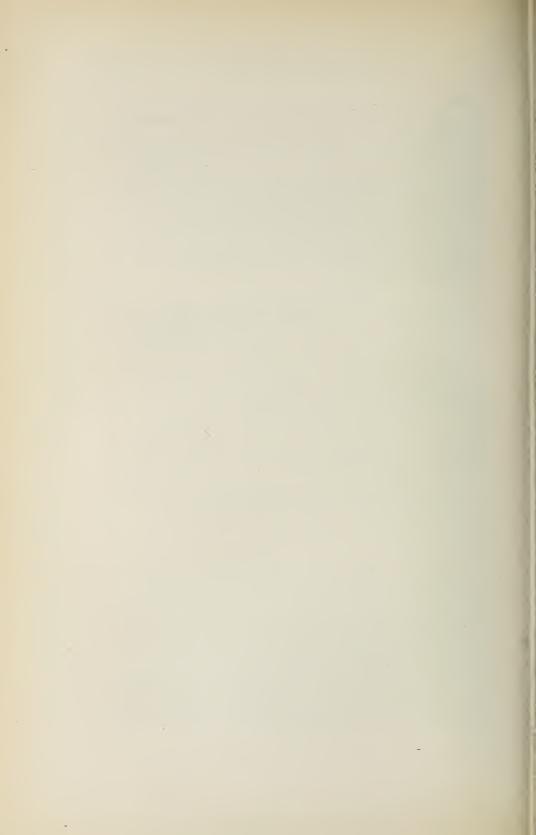
eral knowledge of kindred subjects and to furnish popular instruction.

The Museum has extended far beyond the hopes and plans of its Founders as an institution of value in national education and of profound and extensive research in many branches of science, and as a center of exploration not only in North and South America, but in all parts of the world. It thus reflects in this period of its development the present spirit of America, which can no longer live for or within itself, but is preparing to send the enlightening principles of science and civilization to other parts of the world.

Respectfully submitted,

Henry Fairfield Osborn,

President.



## III. FINANCES, MAINTENANCE, ENDOWMENT

Few changes have been made in the method of recording the financial transactions of the Museum. In accordance with the By-Laws, the books are kept at the Museum under the immediate direction of the Bursar, Mr. Frederick H. Smyth. All moneys, except of the Endowment and Investment Account, have been deposited with the United States Trust Company of New York as Assistant Treasurer. Under the direction of the Auditing Committee, the Audit Company of New York has made a semi-annual audit of all the books.

On December 31, the Permanent Endowment was \$7,452,-453.51, which was composed of securities valued at \$7,419,825 and uninvested cash of \$32,628.51. In or-Endowment and der to place the Permanent Endowment on Investment Account a very sound financial basis, the Trustees at the Annual Meeting in February, 1916, directed that all of the stocks held for the Permanent Endowment should be sold and the proceeds invested in bonds that were legal for savings banks to hold. Accordingly, during the year the Finance Committee disposed of stocks which were acquired at \$1,531,160, and the bonds purchased with these proceeds have a par value of \$1,744,698.84. Thus, by the sale of the stocks and the reinvestment in bonds the par value capital of the Endowment has been increased \$213,538.84. On the other hand, the income received from the stocks was at the rate of .053 and vielded \$81,224. The income on the bonds purchased is at the rate of .0434, yielding \$69,045.59. By the conversion, therefore, of the stocks into bonds there has been a decrease in actual income of \$12,178.41.

During the year, the executor of the estate of Maria DeWitt Jesup made further payments, on account of the bequest, of \$1,750,000, thus making a total of 90% paid on the bequest to December 31, 1916.

The principal additions to the General Endowment Fund during the year have been \$10,000 received from the estate of Emil C. Bondy and \$3,200 as receipts from Life Members.

The Special Endowment has been increased by the gift of \$10,000 from Mrs. Russell Sage, which has been set aside as the Margaret Olivia Sage Fund, the income of which is to be devoted to the development of the bird collections.

As the name implies, in the City Maintenance Account are received and disbursed the moneys that are appropriated by the City for the operating expenses of the Museum. In 1916, this amounted to \$212,999, of which \$197,342 was applied to salaries and expenses and \$15,657 to the making of special repairs to the building. However, owing to the insufficiency of this appropriation, the Trustees were obliged to apply \$65,000 of their own funds to the maintenance of the Museum.

The moneys of the Trustees' General Account include the income from the General Endowment, the income from the Morris K. Jesup Fund, membership fees and personal contributions of Trustees. The principal items are as follows:

Income from Morris K. Jesup Fund	\$202,050.86
Income from General Endowment Fund	
Membership Fees	29,344.00
Personal Contributions of Trustees	43,500.00

The Treasurer's books show a balance on hand December 31, 1916, of \$116,559.23.

The balance is made up as follows:

Proceeds of	four notes	of the	United	States Tr	ust Compan	у
of New	York					. \$75,000.00

#### Trustees' Unrestricted Funds:

Sum reserved to meet pledges and obligations of		
1916	\$5,495.00	
Unexpended income	2,985.28	8,480.28

### Trustees' Restricted Funds:

Sum reserved to meet pledges and obligations of	
1916\$25,842.62	
Unexpended income	33,078.95

\$116,559.23

Money which the Museum receives for a definite purpose is deposited in the Special Funds Account and is expended for that purpose only. Thus, this account is made up of a number of entirely distinct funds.

The Crocker Land Expedition was organized and carried on under the auspices of the American Geographical Society, the American Museum of Natural History and the University of Illinois, and the Museum has acted as Treasurer for the funds of this expedition. Accordingly, these moneys have been carried in a special account, known as the Crocker Land Expedition Fund Account.

The equipment work of the Museum is carried on largely by appropriations of corporate stock made by the Corporate Stock Account

Corporate Stock Account

City. As these moneys must be kept distinct from the moneys received for maintenance, the transactions are recorded in a special account, designated as the Corporate Stock Account.

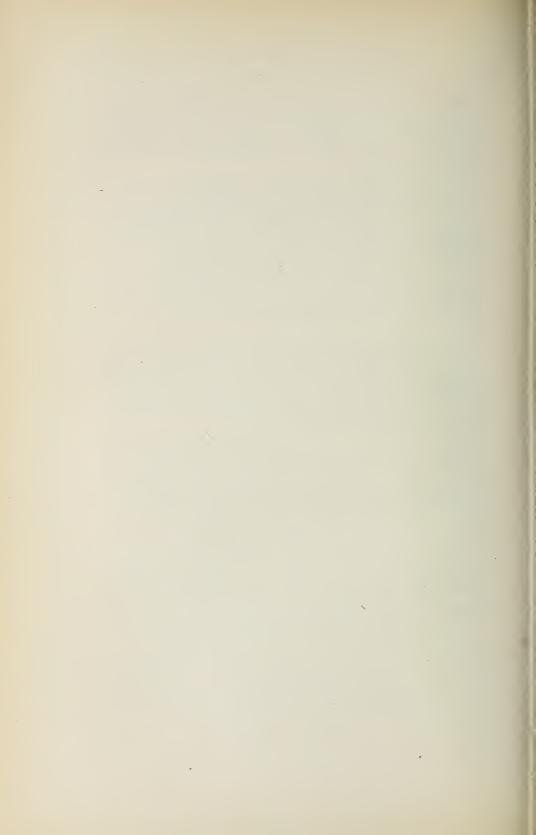
The moneys that are being received as contributions to the building fund of the Museum are being recorded in the Museum Building Fund Account, and the interest thereon will accumulate and be credited to this fund.

The Treasurer of the Museum is ex officio the Treasurer of the Pension Fund. The details of the receipts and disbursements of this fund will be found on pages 231 to 235 inclusive.

Respectfully submitted,

HENRY P. DAVISON,

Treasurer.



## FINANCIAL STATEMENT

## 1916

## PERMANENT ENDOWMENT\*

Morris K. Jesup Fund:			
Bonds \$5,934,238 80			
Stocks (Bequest Value) 187,825 00			
	6,122,063	Во	
General Endowment Fund	1,208,877	0	
John B. Trevor Fund	25,000	00	
Josiah M. Fiske Fund	10,000	00	
Matilda W. Bruce Fund	11,000	00	
Solomon Loeb Fund	5,000	00	
Jonathan Thorne Memorial Fund	26,884	0	
Margaret Olivia Sage Fund	11,000		
-		<b>-</b> \$7,419,825	00
Uninvested Cash:			
Morris K. Jesup Fund		29,812	19
General Endowment Fund		2,813	43
Margaret Olivia Sage Fund		2	89
		\$7,452,453	51

<sup>\*</sup> The income of the Permanent Endowment is the chief source of income of the General Account.

## ENDOWMENT AND INVESTMENT ACCOUNT

#### RECEIPTS

GENERAL ENDOWMENT FUND:			
Balance	\$1,283 0	2	
Estate of Emil C. Bondy	10,000 0	0	
Life Members	3,200 0	0	
Payment by Reorganization Committee of Chicago, Rock Island and Pacific			
Ry. Co.	425 0		
Proceeds from Sale of Bonds and Stocks	23,730 0	1 - \$38,638	-00
Morris K. Jesup Fund:		-	03
Balance	\$8,231 6	I	
Transferred from Income on Morris K.			
Jesup Fund No. 2, General Account	20,499 7		
Estate of Maria DeWitt Jesup	1,750,000 0		
Proceeds from Sale of Bonds and Stocks	1,847,325 2	3 - 3,626,056	60
JONATHAN THORNE MEMORIAL FUND:			Ĭ
Darance	• • • • • • • • • • • •	. 2	21
MARGARET OLIVIA SAGE FUND:			
Gift of Margaret Olivia Sage		10,000	00
I C D		Í	
Interest on Credit Balances:			
Earnings to December 31, 1916	• • • • • • • • • • • • • • • • • • • •	4,303	73
		\$3,679,000	60
Examined and Approved   George W. Wickersham Thomas DeWitt Cuyle Frederick F. Brewster	A Auditin	g nmittee	

## ENDOWMENT AND INVESTMENT ACCOUNT

#### DISBURSEMENTS

1916

MORRIS K. JESUP FUND: Purchase of Bonds	GENERAL ENDOWMENT FUND: Purchase of Bonds	\$35,824	6о
JONATHAN THORNE MEMORIAL FUND:  Transferred to Jonathan Thorne Memorial Fund, Special Funds Account	Morris K. Jesup Fund:		
Transferred to Jonathan Thorne Memorial Fund, Special Funds Account	Purchase of Bonds	3,596,244	44
Transferred to Jonathan Thorne Memorial Fund, Special Funds Account	JONATHAN THORNE MEMORIAL FUND:		
Purchase of Bonds	Transferred to Jonathan Thorne Memorial Fund,		21
Transferred to Margaret Olivia Sage Fund, Special Funds Account 2 11 9,997 11  INTEREST ON CREDIT BALANCES: Transferred to Interest on Credit Balances, General Account 4,303 73  CASH ON HAND December 31, 1916 32,628 51	Margaret Olivia Sage Fund:		
Fund, Special Funds Account 2 11 9,997 11  INTEREST ON CREDIT BALANCES: Transferred to Interest on Credit Balances, General Account	13/330		
Transferred to Interest on Credit Balances, General Account			II
Account	Interest on Credit Balances:		
			73
\$3,679,000 60	Cash on hand December 31, 1916	32,628	51
		\$3,679,000	60

H. P. DAVISON, Treasurer

E. & O. E.

NEW YORK, December 31, 1916

## CITY MAINTENANCE ACCOUNT

#### RECEIPTS

1916

Capital Fund, Cash on Hand January 1, 1916	\$15,000 00
Department of Parks:	
Salaries and Expenses	
Bills awaiting Reimbursement 1,080 91	
13,037 00	
\$212,999 00	
Total net receipts for the maintenance of all departments	212,999 00
Interest on Credit Balances:	
Earnings to December 31, 1916	284 38
Loans	7,400 00
	\$235,683 38

Examined Committee

## CITY MAINTENANCE ACCOUNT\*

#### DISBURSEMENTS

#### 1916

Total net disbursements for the maintenance of all departments
Interest on Credit Balances:
Transferred to Interest on Credit Balances, General Account
Loans
Capital Fund:
Cash on hand December 31, 1916
\$235,683 38

## H. P. DAVISON, Treasurer

E. & O. E.

NEW YORK, December 31, 1916

<sup>\*</sup> 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 1916, amounting to \$65,000, has been met from the Trustees' General Account.

## GENERAL ACCOUNT

RECEIPTS

1916		
Trustees' Restricted Funds:		
Income from Morris K. Jesup Fund, 1915:		
Cash on hand January 1, 1916:		
Cash in Bank		
Loan Receivable, Crocker Land Expedition		
Fund Account 9,500 00	<b></b>	
Income from Marris V. Icaus Fund 1016	\$47,065 24	
Income from Morris K. Jesup Fund, 1916	202,050 86	\$249,116 10
Trustees' Unrestricted Funds:		φ249,110 10
Cash on hand January 1, 1916:		
Cash in Bank	\$5,354 55	
Income from General Endowment Fund	57,211 88	
Interest on Credit Balances	5,290 61	
Annual Members	26,670 00	
Sustaining Members	1,750 00	
Associate Members	924 00	
Sales and Exchanges	1,056 39	
Sale of Publications	3,642 23	
Contributions of Trustees for General Receipts:		
George F. Baker \$1,000 00 Arthur Curtiss James. \$2,500 00		
Frederick F. Brewster. 625 00 A. D. Juilliard 1,250 00		
Joseph H. Choate 500 00 Charles Lanier 500 00		
R. Fulton Cutting 500 00 Ogden Mills 1,250 00		
Thomas DeWitt Cuyler 500 00 J. P. Morgan 1,500 00		
Cleveland H. Dodge 2,500 00 John B. Trevor 1,000 00		
James Douglas 1,000 00 Felix M. Warburg 1,250 00	,	
Henry C. Frick 1,625 oo George W. Wickersham 500 oo		
Adrian Iselin, Jr 2,000 00	20,000 00	
Special Grant of Trustees to Employees, 1916:		
Frederick F. Brewster. \$1,000 00 Arthur Curtiss James. \$2,500 00		
George F. Baker 1,000 00 Walter B. James 500 00		
Joseph H. Choate 1,000 oo A. D. Juilliard 1,000 oo		
R. Fulton Cutting 1,000 00 Charles Lanier 1,000 00		
Thomas DeWitt Cuyler 250 oo Ogden Mills 1,000 oo		
H. P. Davison 1,000 00 J. P. Morgan 1,000 00		
Cleveland H. Dodge 2,500 00 Henry Fairfield Osborn 500 00		
James Douglas 1,000 00 Percy R. Pyne 1,000 00		
Henry C. Frick 2,500 00 John B. Trevor 250 00 Archer M. Huntington 1,500 00 Felix M. Warburg 1,000 00		
Adrian Iselin, Jr 1,000 00  Adrian Iselin, Jr 1,000 00	23,500 00	145,399 66
11011011 1001111, 1111111 1,000 00		-43,333 **
Total net receipts for the development of all departments		\$394,515 76
Loans:		
City Maintenance Account \$7,400 00		
Bursar's Account		
Loan Receivable, Crocker Land Expedition		
Fund Account 6,100 00		
		25,500 00
Proceeds of Notes held by United States Trust Co. of N. Y		75,000 00
	-	\$100.500
		\$495,015 76
Examined George W. Wickersham Auditing		
THOMAS DEWITT CUYLER	20	
and Approved FREDERICK F. BREWSTER Committee	c	

## GENERAL ACCOUNT\*

DISBURSEMENTS

1916	
Geology and Invertebrate Palæontology	\$10,672 95
Mineralogy	2,273 96
Mammalogy and Ornithology	34,699 52
Vertebrate Palæontology	36,506 07 5,738 73
President Osborn's Science Fund	2,500 00
Anthropology	30,307 95
Ichthyology	5,559 41
Ichthyology	1,200 00
Herpetology	4,186 81
Invertebrate Zoölogy	13,071 94
Anatomy and Physiology	3,119 87
Public Health	2,366 31 2,460 98
Library	10,389 94
Public Education	8,332 51
Preparation and Exhibition	39,619 39
Publications	35,857 26
Heating and Lighting	4,969 97
Repairs and Installation	6,024 38
General Supplies and Expenses	23,049 47
Administration	8,396 90
Pension Fund	8,942 06 31,449 65
Interest on Bank Loans	760 71
Total net disbursements for the development of all depart Loans: City Maintenance Account Bursar's Account Crocker Land Expedition Fund Account Cash on hand December 31, 1916: Trustees' Restricted Funds: Cash in Bank Cash in Bank Fund Account Trustees' Unrestricted Funds: Cash in Bank Proceeds of Notes held by United States Trust Co. of N. Y. to meet overdrafts Unassigned Income of Morris K. Jesup Fund, 1915: Transferred to Morris K. Jesup Fund, Endowment and Account, for investment	\$7,400 00 12,000 00 6,100 00 25,500 00 33,078 95 8,480 28 75,000 00 Investment
E. & O. E.	4493,013 70
	AVISON, Treasurer
* Disbursements of this account are made, as the Board of Trustees m specimens, for the expenses of field parties and for the support of scientific † The Treasurer's books show a balance on hand December 31, 1916, of The balance is made up as follows:  Proceeds of four notes of the United States Trust Company of N York  Trustees' Unrestricted Funds:  Sum reserved to meet pledges and obligations of 1016.	nay direct, for the purchase of work. \$116,559 23
Trustees' Unrestricted Funds:	\$75,000 00
Sum reserved to meet pledges and obligations of 1916. \$5,495 Unexpended income 2,985 Trustees' Restricted Funds: Sum reserved to meet pledges and obligations of 1916. \$25,842	28 — 8,480 28
Unexpended income	33,078 95 \$116,559 23

## RECEIPTS

1910				
GEOLOGY AND INVERTEBRATE PALÆONTOLOGY:				
Angelo Heilprin Exploring Fund:				
' Ralance \$211.04				
Mr. and Mrs. Paul J. Sachs 500 00				
	\$811	04		
Geological Fund:		•		
James Douglas	1,000	00		
M			\$1,811	04
Mineralogy:				
Matilda W. Bruce Fund:				
Interest	••••	• • •	660	00
Mammalogy and Ornithology:				
Crandall Oölogical Fund: Balance	t 160	~~		
Whale Model Fund:	p1,100	00		
Balance	T 000	00		
South American Exploration Fund:	1,000	00		
Balance \$548 55				
Frederick F. Brewster 625 00				
	1,173	55		
ROOSEVELT SOUTH AMERICAN EXPLORATION FUND:				
Balance	237	88		
SOUTH GEORGIA EXPEDITION FUND No. 2:				
Balance	500	00		
Peru Bird Fund:				
National Geographic Society	1,000	00		
Asiatic Zoölogical Expedition Fund:				
Balance				
Henry C. Frick				
James B. Ford 500 00				
Henry C. Frick				
Expedition Fund No. 2 500 00				
Mammal Collecting Fund:	2,425	00		
George Shiras, 3d	1.12	27		
Margaret Olivia Sage Fund:	143	-/		
Interest\$229 37				
Transferred from Endowment and				
Investment Account 2 II				
	231	48		0
Vanagana and Der montagere			7,871	18
VERTEBRATE PALÆONTOLOGY:				
PLEISTOCENE FAUNAL LIFE SCENES FUND:			0.60-	-
J. P. Morgan	• • • • •	• •	3,627	50
Carried forward		\$	13,969	72

#### DISBURSEMENTS

1910	
GEOLOGY AND INVERTEBRATE PALÆONTOLOGY:	
Angelo Heilprin Exploring Fund:	
Transferred to Crocker Land Expedition Fund Account for Geological Work in North Greenland	\$811 04
Mineralogy:	
MATILDA W. BRUCE FUND:	
Purchase of Minerals	6 <b>5</b> 8 94
Mammalogy and Ornithology:	
South American Exploration Fund:	
Purchase of Birds of Peru \$140 25	
ROOSEVELT SOUTH AMERICAN EXPLORATION FUND:	
Services of field assistant in South America 237 88	
SOUTH GEORGIA EXPEDITION FUND No. 2:	
Transferred to Asiatic Zoölogical Expedition Fund for field work in China 500 00	
PERU BIRD FUND:	
For expenses of field assistant in Peru 500 00	
ASIATIC ZOÖLOGICAL EXPEDITION FUND:	
Expenses of field assistant in China 2,425 00	
MAMMAL COLLECTING FUND:	
Expenses of field assistant in Ontario 143 27	3,946 40
VERTEBRATE PALÆONTOLOGY:	
PLEISTOCENE FAUNAL LIFE SCENES FUND:	
For Murals in the Hall of the Age of Man	3,127 50
Carried forward	\$8,543 88

<sup>\*</sup> In this account are carried all moneys given to the Museum for specific purposes.

#### RECEIPTS

Brought forward\$13,969 72
Anthropology:
East Asiatic Fund: Balance\$2,335 49
Anthropology of the Southwest Fund: Balance
Aztec Ruin Fund: J. P. Morgan
New Zealand Group Fund:  Percy R. Pyne
Ichthyology:
Dodge Ichthyology Fund:  Balance
Balance
Invertebrate Zoölogy:
SOUTHEASTERN ENTOMOLOGICAL FUND: Gaylord C. Hall
SOUTHWESTERN ENTOMOLOGICAL FUND:  B. Preston Clark
Public Health:
Public Health Fund: Felix M. Warburg
Library:
Library Fund: Ogden Mills
Carried forward\$31,869 07

## DISBURSEMENTS

-5	
Brought forward\$	8,543 88
Anthropology:	
Anthropology of the Southwest Fund:  Expenses of field work and purchase of specimens\$4,569 31  Transferred to Anthropology, General Account, for purchase of specimens	
Aztec Ruin Fund:	
Expenses of field work 2,000 00	
New Zealand Group Fund: Field studies and sketches	8,175 60
Ichthyology:	0,2,5
Dodge Ichthyology Fund: Purchase of specimens, expenses of field parties in China and North Carolina, and special services \$802 00 Transferred to Herpetology, General Account, for field expenses in Nicaragua	
FISH BIBLIOGRAPHY FUND:	
Services in preparing Bibliography of Fishes 1,149 98	2,951 98
Invertebrate Zoölogy:	2,931 90
SOUTHEASTERN ENTOMOLOGICAL FUND: Field expenses in Georgia	
Southwestern Entomological Fund: Field expenses in Arizona	649 46
Public Health:	049 4.7
Public Health Fund: Special services	
Transferred to Public Health, General Account, for department work 309 68	0
Library:	947 18
LIBRARY FUND: Purchase of special books	
for special books 244 00	
	1,250 00
Carried forward	22,518 10

#### RECEIPTS

Brought forward\$31,869 07
Public Education: Jonathan Thorne Memorial Fund:
Balance       \$1,257 71         Interest       1,084 20         Transferred from Endowment and Investment Account       2 21
Public Education Fund:  R. Fulton Cutting
CHILDREN'S ROOM FUND: Balance
School Fund:  Transferred from Incidental Account
PREPARATION AND EXHIBITION:
Sea Elephant Preparation Fund: Balance
Publications:  Jesup North Pacific Expedition Publication Fund: Balance \$1,121 65
Museum Journal Fund:  Balance
Total net receipts for the development of specific departments
Interest on Credit Balances: Earnings to December 31, 1916
\$39,202 73
Examined and Approved     Committee   Committee   Committee

#### DISBURSEMENTS

1916

Brought forward ......\$22,518 10

#### PUBLIC EDUCATION:

#### JONATHAN THORNE MEMORIAL FUND:

For services of instructors, transportation of the blind and expenses of special lectures. \$2,043 84

#### PUBLIC EDUCATION FUND:

Purchase of educational motion pictures ... 380 00

#### SCHOOL FUND:

Loaning slides to public schools .......... 1,640 70

4,064 54

#### PUBLICATIONS:

#### MUSEUM JOURNAL FUND:

#### INTEREST ON CREDIT BALANCES:

\$39,202 73

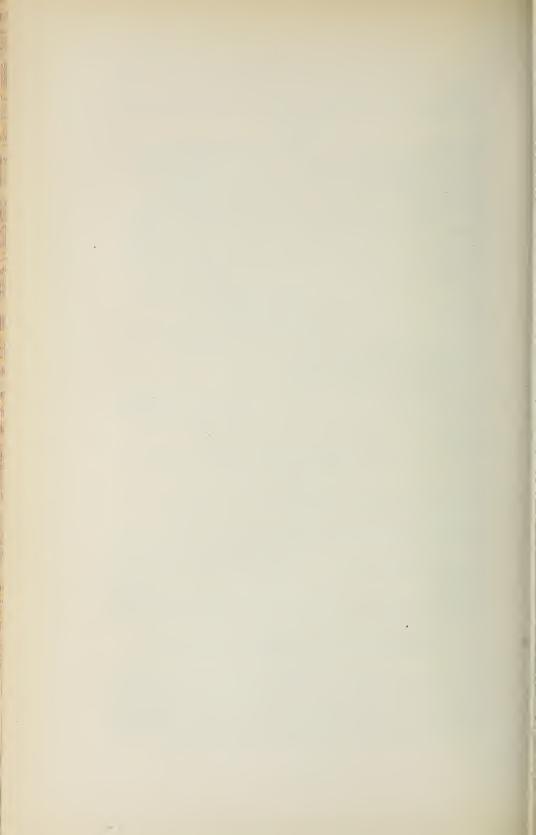
H. P. DAVISON, Treasurer

E. & O. E.

New York, December 31, 1916

CROCKER LAND EXPEDITION FUND ACCOUNT RECEIPTS 1916
CASH ON HAND January I, 1916       \$3,540 88         Walter B. James       \$1,000 00         Arthur Curtiss James       6,000 00         James B. Ford       5,000 00         Francis Lynde Stetson       100 00         R. A. F. Penrose       50 00         Zenas Crane       1,000 00         Charles Steele       500 00         Geological Society of America       1,000 00         Althea R. Sherman       5 00
SPECIAL FUNDS ACCOUNT: Angelo Heilprin Exploring Fund
LOAN ACCOUNT: General Account
Examined and Approved   Examined THOMAS DEWITT CUYLER FREDERICK F. BREWSTER  Examined Committee 185 11
CORPORATE STOCK ACCOUNT  RECEIPTS 1916  DEPARTMENT OF PARKS
Examined and Approved   GEORGE W. WICKERSHAM THOMAS DEWITT CUYLER FREDERICK F. BREWSTER  Auditing Committee
INCIDENTAL ACCOUNT RECEIPTS 1916
Cash on Hand January 1, 1916
Examined George W. Wickersham Auditing 3,837 88 and Approved FREDERICK F. BREWSTER  Auditing Committee
MUSEUM BUILDING FUND ACCOUNT RECEIPTS 1916
GIFT OF JAMES DOUGLAS\$100,000 00 INTEREST ON CREDIT BALANCES: Earnings to December 31, 1916
Examined and Approved Secretary Thomas DeWitt Cuyler Frederick F. Brewster Committee Secretary Committee

CROCKER LAND EXPEDITION FUND ACCOUNT DISBURSEMENTS 1916
Disbursements of 1913, met by loan from General Account still unsubscribed
Cash on hand December 31, 1916
\$34,792 03
E. & O. E. New York, December 31, 1916 H. P. DAVISON, Treasurer
CORPORATE STOCK ACCOUNT DISBURSEMENTS 1916
PAYROLLS OF MECHANICS, ETC
\$5,537 14
E. & O. E. New York, December 31, 1916 H. P. DAVISON, Treasurer
INCIDENTAL ACCOUNT DISBURSEMENTS
1916
DISBURSEMENTS FOR INDIVIDUALS AND
Societies
Transferred to Interest on Credit Balances, General Account
Cash on hand December 31, 1916 207 13
E. & O. E.  New York, December 31, 1916  H. P. DAVISON, Treasurer
MUSEUM BUILDING FUND ACCOUNT DISBURSEMENTS 1016
Cash on hand December 31, 1916\$100,451 39
E. & O. E.  New York, December 31, 1916  H. P. DAVISON, Treasurer



#### IV. MEMBERSHIP

The Museum greatly appreciates the interest of its Members in extending its influence among their friends, and this publicity in regard to the Museum's work is of importance equal with that of the contributions received from the membership fees.

Through its explorations The American Museum of Natural History is bringing to New York rare and valuable natural history collections. Through its exhibition halls, its system of extension to the schools and its publications, the Museum is making these wonders of nature easily accessible to the people of this city. The growth of this work is in large measure dependent upon the contributions of friends, and membership receipts are applied directly to these purposes.

Members enjoy certain privileges: The use of the Members' Room, especially fitted for their convenience; Members receive gratis The American Museum Journal, containing authoritative articles and pictures obtained Privileges enjoyed by directly from explorers, travelers, medical men. Members scientists, educators and thinkers-men who are doing the big work of the world in scientific exploration and discovery and who give their best pictures and first accounts here. These articles are popular in the best sense of the term. Members receive current copies of the Guide Leaflets on request. They may also have the services of an instructor, if desired, when visiting the Museum. Members receive tickets for lectures given at the Museum, and notification, when desired, of meetings of scientific societies holding sessions at the Museum, whose programs often include matters of general interest.

First announcement of all important scientific explorations is always made to our Members. The spring course of lectures

to Members included one by Mr. James P. Chapin on "The Congo and Its Bird Life." Mr. Chapin returned in 1915 from six years of exploration in the Congo, having made the finest and most complete collection of birds ever obtained in this region. In the autumn course Dr. Frank M. Chapman, in a lecture entitled "A Bird's-eye View of South America," summed up the ornithological work carried on by the Museum in South America for the past six years.

The seventh and eighth series of Nature Stories for the Children of Members were given during the year. In the spring course Sir Douglas Mawson's Motion Pictures of Animal Life in the Antarctic were shown and explained. These included remarkable pictures of the Adélie Penguins and other antarctic birds and animals.

On January 21, under the auspices of the American Scenic and Historic Preservation Society, a "Prologue Without Words: 'Our Country'" was given. This consisted Special of views of the Panama-Pacific Exposition and of Lectures several of our National and State Parks, and was followed by a lecture by Mr. George W. Perkins on the "Palisades Interstate Park," accompanied by views. On February 24, a lecture and exhibition of "Wonder Color Pictures" of the Columbia Highway, Rainier Park and mountain scenery in the Northwest, taken by Mr. Henry Berger, Jr., and Mr. Frank Ives Jones, were presented for our Members. On May 12, Mr. Frederick S. Hughes gave a lecture and exhibition of motion pictures, entitled "Climbing up the Golden Ladder of Learning," depicting educational methods in the city of Los Angeles. On October 26, Members were invited to spend an evening in the Parks of the State of New York, under the auspices of the American Scenic and Historic Preservation Society, addresses being given by the Honorable George D. Pratt and Mr. George W. Perkins. Views of several of the parks were shown.

The biennial Jesup Lectures, in coöperation with Columbia University, were given in November and December by Dr.

Robert S. Woodworth. There were eight lectures, the general subject being "Dynamic Psychology."

Including the lectures for pupils of the public schools, a membership fee of \$10 entitled Members to attend more than seventy-five lectures. In addition to these were the papers presented before the scientific societies meeting at the Museum, of which Members are notified upon request.

For some time the Trustees have thought that a large number of people would enjoy being associated with the Museum, but that, owing to remote residence from New York and infrequent visits, these friends cannot participate in the lectures and various other privileges that come to the Annual Members because of their near residence. The Trustees, therefore, have created a new class of Membership, designated as Associate Members. The only condition of eligibility to Associate Membership is that the candidate reside at least fifty miles from New York City and pay the annual fee of \$3.

Associate Members enjoy the following privileges:

Current issues of The American Museum Journal.

A complimentary copy of the President's Annual Report.

An Annual Pass admitting to the Members' Room.

Two Complimentary Tickets admitting to the Members' Room for distribution to their friends.

The Services of an Instructor for guidance when visiting the Museum.

Although the announcement of the establishment of this class of membership was not made until April, 1916, more than 300 persons became Associate Members before the close of the year. It is of interest that this list includes residents of 144 cities and towns of 32 States, and also residents of the Provinces of Quebec and Manitoba in Canada.

Under the direction of the Assistant Secretary, Mr. George H. Sherwood, systematic efforts have been made to increase the membership. By special invitation, by letter and through *The American Museum Journal*, the work of the institution is brought to the attention of proposed candidates. The cordial coöperation of Members in suggesting their friends for election is greatly appreciated and is a fruitful source of new members.

It is gratifying to report that the number of new members enrolled during 1916 was 654; the loss through death and resignation was 177, showing a net gain of 477. On December 31, 1916, the total membership was 4,109, divided into classes as follows:

Founders	3	Fellows 39
Benefactors	5	Honorary Fellows 8
Associate Founders	10	Life Members 682
Associate Benefactors	19	Sustaining Members 83
Patrons	108	Annual Members2,844
Associate Members	(non	-resident)308

#### **NEW MEMBERS**

The following were elected Benefactors:

CLEVELAND H. DODGE ARCHER M. HUNTINGTON
JAMES DOUGLAS ARTHUR CURTISS JAMES

The following were elected Associate Founders:

Mrs. John B. Trevor Felix M. Warburg

The following was elected an Associate Benefactor:

Mrs. Russell, Sage

The following were elected Patrons:

Dr. Bashford Dean L. D. Kellogg James B. Ford Henry C. Swords

The following were elected Fellows:

Mrs. Herbert L. Satterlee Charles Steele

## The following were elected Life Members:

S. PRENTISS BALDWIN HENRY McC. BANGS ROBERT WOODS BLISS ALEXANDER SMITH COCHRAN WALTER GRAY CRUMP, JR. JOHN WALDO DOUGLAS HENRY C. DRAYTON COLEMAN DU PONT WILLIAM FRANKLIN LUXTON EDWARDS Louis J. Ehret OTTO M. EIDLITZ LINCOLN ELLSWORTH ALFRED WARREN GALE GAYLORD C. HALL Mrs. Stephen V. Harkness Mrs. Frederic Delano Hitch NORMAN JAMES FREDERIC A. JUILLIARD ALEXANDER SANFORD KELLOGG

JAMES GORE KING, IR. ALPHONSE H. KURSHEEDT Mrs. Adolf Ladenburg JOHN H. LOVE GATES W. McGARRAH DWIGHT W. MORROW A. Perry Osborn H. FAIRFIELD OSBORN, JR. RUSSELL PERKINS JULIA J. PIERREPONT CHAS. E. POTTS HAROLD I. PRATT M. TAYLOR PYNE FINLEY J. SHEPARD ROBERT D. STERLING IRVING K. TAYLOR IRA OTIS TRACY, M.D. A. VAN CORTLANDT Mrs. M. Orme Wilson F. W. WOOLWORTH

## The following have become Sustaining Members:

Mrs. H. B. Duryea Mrs. Thomas A. Edison A. W. Erickson Mrs. M. Goldfrank A. Augustus Healy Max Herman J. Prentice Kellogg

PHILIP C. LINDGREN
HOWARD NOTMAN
MISS EMELINE ROACH
MRS. ISAAC N. SELIGMAN
LISPENARD STEWART
MRS. P. A. VALENTINE
FRIDA ZINSSER

#### DECEASED TRUSTEES AND MEMBERS

Trustee

SETH LOW, LL.D.

Patrons

SETH LOW, LL.D.

Dr. Edgar A. Mearns, U.S.A.

Fellow

CHARLES D. STICKNEY

Life Members

Mrs. Albert Bierstadt George C. Boldt I. E. Gates

Mrs. Charles W. Harkness Chas. W. Harkness Mrs. D. Willis James

Mrs. A. D. Juilliard Seth Low, LL.D. Thomas H. O'Connor

THOMAS POTTS
CHAS. B. WEBSTER
L. STUART WING

A complete list of members is appended.

Respectfully submitted,

Adrian Iselin, Jr.,

Secretary.

# LIST OF TRUSTEES AND TERMS OF SERVICE

## 1869-1916

The Mayor of the City of New York1908-
The President of the Department of Parks1908-
The Comptroller of the City of New York1908-
Auchincloss, Hugh1876–1890
Baker, George F
Bickmore, Albert S1885–1914
Bishop, H. R
Blatchford, Richard M
Blodgett, William T
Bowdoin, George S1903-1913
Brewster, Frederick F1913-
Choate, Joseph H1869-
Colgate, Robert
Constable, James M1872–1900
Cutting, R. Fulton1914-
Cuyler, Cornelius C1904–1909
Cuyler, Thomas DeWitt1910-
Dana, Chas. A1869–1872
Davison, Henry P1916-
Dodge, A. G. Phelps1869–1872
Dodge, Cleveland H1904-
Dodge, W. E., Jr1872–1903
Douglas, James1909-
Drexel, Joseph W1872–1888
Elliot, Daniel Giraud1915-1915
Field, Benjamin H1869–1893
Frick, Henry C1914-
Gerry, Elbridge T1894–1902
Grant, Madison1911-
Green, Andrew H1869-1903
Grinnell, Moses H1869–1872
Haines, William A1869–1880
Hard, Anson W1894-
Harriman, Oliver
Havemeyer, H. O1898–1907
Havemeyer, Theodore A1891–1897
Haven, George G1892–1895

Hewitt, Abram S	0=4 7000
Huntington, Archer M	
Hyde, Frederick E	
Hyde, James H	
Iselin, Adrian	
Iselin, Adrian, Jr	1905-
James, Arthur Curtiss	1903
James, D. Willis	
James, Walter B	
Jesup, Morris K	
Juilliard, A. D	
Kissel, Gustav E	
Landon, Charles G	
Lanier, Charles	1874-
Low, Seth	1905–1916
Mills, D. O	
Mills, Ogden	1910-
Morgan, J. Pierpont	1869-1913
Morgan, J. P	
Morton, Levi P.	
Osborn, Henry Fairfield	
Ottendorfer, Oswald	
Parish, Henry	
Potter, Howard	
Pyne, Percy R	
Pyne, Percy R	
Robb, J. Hampden	
Rockefeller, William	
Rogers, Archibald	
Roosevelt, Theodore	
Roosevelt, Theodore	
Sherman, Benjamin B.	
Stebbins, Henry G.	
Stevens, Frederic W.	
Steward, D. Jackson	
Stuart, Robert L.	
Trevor, John B.	
Trevor, John B	
Warburg, Felix M.	
Wickersham, George W	1910-
Whitney, William C.	
Wolfe, John David	1809-1872

## LIST OF MEMBERS

## December 31, 1916

#### **FOUNDERS**

This class of members is composed of the incorporators of the Museum

WILLIAM T. BLODGETT.\*
JOSEPH H. CHOATE.
ROBERT COLGATE.\*
CHARLES A. DANA.\*
A. G. PHELPS DODGE.
BENJAMIN H. FIELD.\*
WILLIAM A. HAINES.\*
ADRIAN ISELIN.\*

Morris K. Jesup.\*
J. Pierpont Morgan,\*
Henry Parish.
Howard Potter.\*
Theodore Roosevelt.\*
Benjamin B. Sherman.\*
D. Jackson Steward.\*
Robert L. Stuart.\*

JOHN DAVID WOLFE.\*

#### BENEFACTORS

By contribution of \$50,000, or through honorary election

CLEVELAND H. DODGE.

JAMES DOUGLAS.

ARCHER M. HUNTINGTON.

ARTHUR CURTISS JAMES.
Mrs. Morris K. Jesup.\*
J. Pierpont Morgan.\*

HENRY FAIRFIELD OSBORN.

#### ASSOCIATE FOUNDERS

By contribution of \$25,000, or through honorary election

CLEVELAND H. DODGE.
ARCHER M. HUNTINGTON.
ARTHUR CURTISS JAMES.
CHARLES LANIER.
OGDEN MILLS.

J. P. Morgan.
PERCY R. PYNE.
WILLIAM ROCKEFELLER.
Mrs. JOHN B. TREVOR.
FELIX M. WARBURG.

## ASSOCIATE BENEFACTORS

By contribution of \$10,000, or through honorary election

GEORGE S. BOWDOIN.\*

JOSEPH H. CHOATE.

THOMAS DE WITT CUYLER.

\* Deceased.

CLEVELAND H. DODGE. ANSON W. HARD. ARCHER M. HUNTINGTON. ARTHUR CURTISS JAMES.
A. D. JUILLIARD.
CHARLES LANIER.
JOSEPH F. LOUBAT.
OGDEN MILLS.
J. P. MORGAN.
HENRY FAIRFIELD OSBORN.

PERCY R. PYNE.
WILLIAM ROCKEFELLER.
Mrs. RUSSELL SAGE.
JACOB H. SCHIFF.
JOHN B. TREVOR.
Mrs. JOHN B. TREVOR.
FELIX M. WARBURG.

#### **PATRONS**

By contribution of \$1,000, or through honorary election

EDWARD D. ADAMS. JOHN ANDERSON.\* JAMES ANGUS.\* HICKS ARNOLD.\* RICHARD ARNOLD.\* WILLIAM H. ASPINWALL.\* JOHN JACOB ASTOR.\* WILLIAM WALDORF ASTOR. Hugh Auchincloss.\* BENJAMIN AYMAR.\* GEORGE F. BAKER. Mrs. GUY ELLIS BAKER. A. H. BARNEY.\* D. N. BARNEY.\* JAMES GORDON BENNETT. ALBERT S. BICKMORE.\* Mrs. Albert S. Bickmore. Frederick Billings.\* HEBER R. BISHOP.\* GEORGE BLISS.\* George T. Bliss.\* Miss Susan Dwight Bliss. Mrs. WILLIAM H. BLISS. WILLIAM T. BLODGETT.\* ROBERT BONNER.\* HENRY BOOTH. M. C. D. BORDEN.\* J. A. Bostwick.\* GEORGE S. BOWDOIN.\* GEORGE DEXTER BRADFORD.\* FREDERICK F. BREWSTER. ALEX. H. BROWN, M.P. JAMES BROWN.\* \* Deceased.

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Trowbridge,

S. Breck P. Tucker, Carll Tucker, Mrs. Carll Tuckerman, Alfred Tuckerman.

Mrs. Alfred Tuckerman, Miss Emily Tuckerman, Paul Turck, Dr. Fenton B. Turnbull, Arthur Turnbull, Mrs. Ramsay Turnbull, William Turner,

Mrs. J. Spencer Turnure, George E. Tuska, Benjamin Tuttle.

Donald Seymour Tweed, Charles H. Tweedie, Miss Annie

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William Lyman Untermyer, Alvin Untermyer, Isaac

Vail, Theo. N. Vaillant, Mrs. G. H. Valentine, J. Manson Valentine.

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Miss Cathleen Vanderbilt, Reginald C. Vanderbilt, Mrs. W. K.

Vanderlip, Mrs. F. A. Vanderlip, Frank A. Vanderpoel, Mrs. J. A. Van Dusen, Thos. D. Van Dyke, R. B. van Dyke, Tertius Van Emburgh, D. B. Van Emburgh, Mrs. D. B.

Van Horne, John G. Van Ingen, Edward H. Van Norden.

Ottomar H. van Raalte, Mrs. E. Van Raalte, Mrs. Z. Van Sinderen, Howard Van Vorst.

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Vesper, Karl H.

Catherine D.

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Miss Josephine M. Weil. R. Weiller, Simon Weinberg, Charles Weinberger, Dr. B. W. Weir, Mrs. Chas.

Gouverneur Weiss, Mrs. Chas. Weiss, Mrs. Samuel W. Weist, Harry H., M.D. Weitling, Wm. W. Welinsky, Max Wells, Mrs. John Wells, Judd Elwin Wells, Oliver J. Welsh, S. Chas. Welwood,

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Wertheim, Maurice Wesendonck, M. A. Wessell, Arthur L. Westcott,

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Dr. Herbert L. Wheeler,

John Davenport Wheeler, Miss L. Wheelock, Geo. L. Wheelock, Mrs. G. G. Wheelwright,

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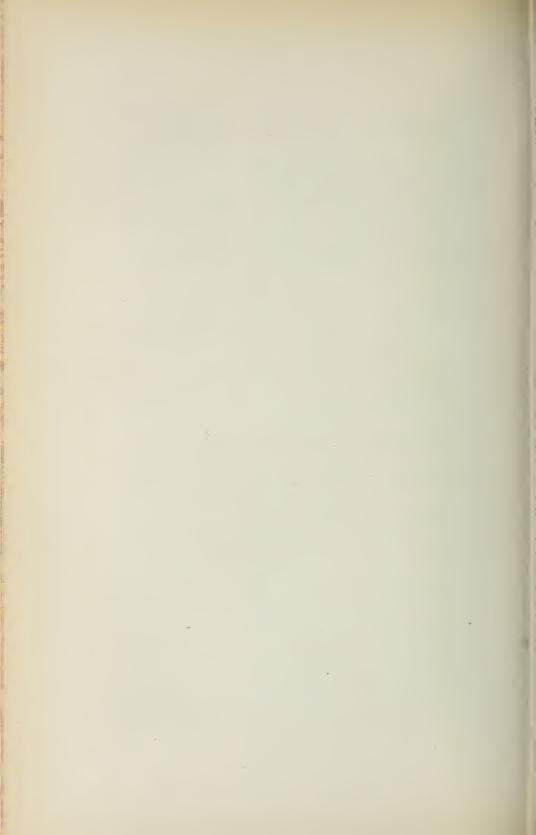
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Wehrle, Augustine T.
Weld, Elizabeth F.
Wheatland, Richard
Wheeler, H. C.
Wheeler, Samuel H.
White, Dr. Charles J.
Whitney, David C.

Whitney, Hammond M.
Will, George F.
Willey, Arthur
Williams, David W.
Wood, Mrs. Richard L.
Woodward,
Lemuel Fox
Wright, A. B.
Wright,

Mrs. Eva Edgar Wright, Miss Harriet H.



# LIST OF ACCESSIONS, 1916

## DEPARTMENT OF PUBLIC **EDUCATION**

#### By GIFT

MISS KATHRYN E. BERGEN, Jamaica, L. I. Myrtle Warbler in flesh, Jamaica, L. I.

RUDOLPH BLASCHKE, Cold Springs, N. Y. Chipmunk in flesh.

MISS LAURA B. BROMALL, Far Rockaway, L. I. Hermit Thrush, Nuthatch and Scarlet

Tanager in flesh, Far Rockaway.

Frank M. Chapman, New York City. 20 Negatives of mounted birds.

Mrs. R. R. Cornell, New York City. Collection of rocks and minerals.

E. W. Deming, New York City.
3 Photographs of Tiger Tiger Shark, Tampico, Mexico.

JOSEPH GAREIS, New York City. Domestic Pigeon in flesh, New York City.

Mrs. L. W. Jenny, New York City. 60 Butterflies, moths and other insects.

DAVID LOWE, Fitchburg, Mass. Exhibit illustrating textile processes.

NEW YORK BOTANICAL GARDEN, Bronx, N. Y.

2 Gray Squirrels in flesh, 12 Gray Squirrel skins.

F. W. PENNELL, Bronx, N. Y. Lantern slide of Mountain Sheep, Colorado.

L. S. QUACKENBUSH, New York City. 4 Photographs of fishes.

HERMAN SEIM, New York City.
Olive-backed Thrush and Belted Kingfisher in flesh.

G. O. SHIELDS, New York City. Section of tree cut by beavers.

H. A. Sievers, New York City. Virginia Rail and Double-yellow-headed Parrot in flesh. Mrs. R. O. Stebbins, New York City. 50 Negatives, 225 photographs in album, 200 photographs unmounted and 155 stereopticon slides of Dr. F. A. Cook's Arctic Expedition to Greenland in 1894.

All tells

ELLIOTT Woods, Washington, D. C.
Lantern slide from bas-relief by Enrico Causica, "Conflict between Daniel Boone and the Indians.

#### By Exchange

ERNEST HAROLD BAYNES, Meriden, N. H. 220 Lantern slides of birds, animals,

# DEPARTMENT OF GEOLOGY AND INVERTEBRATE PALÆONTOLOGY

#### By GIFT

Barnum Brown, New York City. 50 Specimens of ammonites and brachiopods, Folkestone, England.

H. C. Brownell, City Island, N. Y. 2 Small glacial drift boulders, beach of City Island.

THOMAS T. CALLAHAN, Gouverneur, N. Y.

2 Slabs of polished "St. Lawrence" and extra dark "St. Lawrence" marble, St. Lawrence Quarries, Gouverneur.

Mrs. Georgia M. Clapham, Roslyn, N. Y.

Polished pyritiferous ammonite, Lyme Regis, England.

DEPARTMENT OF ANTHROPOLOGY, Trans-

4 Specimens of volcanic rock from the base of Mt. Tarawera, North Island, New Zealand.

DEPARTMENT OF MINES, Sydney, N. S. W. Piece of meteorite (pallasite), Molong,

E. L. FLANDREAU, Port Chester, N. Y. Iron ore (hematite) specimen, near Rye Lake, N. Y.

FOOTE MINERAL COMPANY, Philadelphia, Pa.

12 Plaster casts of siderite ("Burkett").

MISS A. K. HARNED, New York City.
110 Specimens of gold, silver, lead and copper ores, Cripple Creek and vicinity, Colorado.

Samuel Howard, Center Rutland, Vt. 14 Samples of marble slabs, 4" x 6", Alaska, Texas and Vermont.

Louis Hussakof, New York City.
4 Specimens of Ostræa selæformis and
Cardita, near Vicksburg, Miss.

MIDDLEBURY MARBLE COMPANY, Brandon, Vt.

2 Samples of "Pavonazzo and Cream" marbles from quarries at Middlebury, Va.

CHRIS E. OLSEN, New York City. Specimen of petrified wood, 18" x 6" x 4", Lahaway, N. J.

CHARLES PLATZ, New York City. Sea urchin, *Clypeaster rogersi*, Hempstead Beach, L. I.

G. O. SCHLETK, Astoria, L. I. Pitted pebble resembling human face, Astoria.

A. TITTELS, Long Island City, N. Y. 7 Water-worn pebbles, from Pennsylvania Railroad Yard, Long Island City.

EINAR J. VALEUR, New York City. 35 Rock specimens and 2 blocks containing Tertiary fossils, Santo Domingo.

#### By Purchase

2 Eight-ounce "Ness County" aërolites. 10 Specimens of meteorites, "Burkett," "Okano," "La Bécasse."

THROUGH MUSEUM EXPEDITIONS

Miscellaneous fossils from Winnipeg, Canada. Collected by Barnum Brown.

## DEPARTMENT OF MINERALOGY

#### By GIFT

D. J. ATKINS, New York City.2 Specimens of Hubnerite from Portugal.

- JOHN H. BARNHART, Bronx, N. Y. 20 Specimens of miscellaneous minerals.
- J. BICKFORD, New York City. 20 Specimens of miscellaneous minerals.

MATILDA W. BRUCE FUND.

94 Specimens of cabinet minerals.

C. E. Dolbear, Salt Lake City, Utah. Crystal of Cinnabar, Humboldt County, Nev.

HENRY FAIR, SPOKANE, Wash.
5 Specimens of Sphærosiderite, Spokane.

A. La Croix, Paris, France.
 Specimen of Ampangabeite from Ampangabe, Madagascar, specimen of Betafite, Antanifotsy, Madagascar.

Esper S. Larsen, Washington, D. C. Specimen Aegirite, Libby, Mont., 2 Specimens Cancrinite, Gunnison County, Colo., specimen Creedite, Wagon Wheel Gap, Colo., specimen Seartesite, Seartles Lake, I Melilite, Gunnison County, Colo., 2 specimens Hinsdalite, Hinsdale County, Colo., I Cebollite, Gunnison County, Colo.

GEORGE C. LONGLEY, Pelham Manor, N. Y. Quartz conglomerate, Oyster Bay, L. I.

E. HOWARD MARTIN, New York City.
I Specimen each of Chalcopyrite,
Quartz and Sphalerite, Ellenville,
N. Y.

H. Masso, Corozal, Porto Rico. 5 Flat Gold flakes.

Russell Hastings Millward, New York City.

25 Specimens of Emerald in rough, Muzo Mine, Colombia.

Schlesinger Radium Company, Denver, Colo.

5 Specimens of Carnotite, Montrose County, Colo.

GEORGE O. SIMMONS, Brooklyn, N. Y. Specimen of Pectolite, Paterson, N. J., specimen of Fasciculated Hornblende, Charlemont, Mass.

W. F. Westover, Schenectady, N. Y. Large crystal of Phlogopite, Sydenham, Ontario; large mica-sheet.

### By Exchange

FREDERICK I. ALLEN, New York City.
2 Specimens Autunite, Mitchell County,
N. C.

CHARLES W. HOADLEY, Englewood, N. J. Specimen Wollastonite, specimen Leucophenicite, specimen Schefferite, Franklin, N. J.

D. S. Martin, Charleston, S. C. Specimen Thaumasite, West Paterson, N. J.

CONRAD MOELLER, West Paterson, N. J. Specimen Pseudomorph after Glauberite, specimen Pseudomorph after Anhydrite, 2 Apophyllites, 1 Datolite, 1 Prehnite, West Paterson, N. J.

W. D. Nevel, Floral Park, L. I. Smoky Quartz, Topsham, Me.; Tourmaline, Pala Chief Mine, Pala, Cal.

Albert H. Petereit, New York City.
3 Specimens Ampangabeite, specimen
Betafite, 11 specimens Euxenite,
Madagascar.

George S. Scott, New York City.
Specimen Caledonite with Linarite and
Anglesite, Beaver County, Utah;
specimen Pyrite, Bingham Cañon,
Utah; Twinned Quartz, Mount
Lincoln, Park Co., Colo.

Russell S. Tarr, New York City.

2 Large Beryl crystals, Bedford Hills
Quarry, Bedford, N. Y.

E. H. Wilson, Caldwell, N. J.
Specimen Analcite, Thomsonite and
Chabazite, North Table Mountains,
Golden, Colo.

#### By PURCHASE

Dioptase, Kirghiz Steppe, Siberia. Gold nugget, Hunter Creek, Rampart District, Alaska.

Specimen Wiikite, Impilaks, Finland.

10 Specimens Staurolite, Fannin
County, Ga.; 9 Small Tourmaline
crystals, 6 Tourmalines, San Diego,
Cal.

Zinc spinel, Spruce Pine, Mitchell Co., N. C.

2 Specimens Pyrite, Bingham, Utah; 3 specimens of Asterated Rose Quartz, Oxford County, Me.

Specimen Crystallized Gold, California.

3 Specimens Apophyllite, West Paterson, N. J.

Specimen Carnotite, Long Park, Colo.; specimen of Wulfenite, Oregon Mountains, N. Mex.

Specimen Apophyllite, Paterson, N. J. Specimen Pyrite, Leadville, Colo.

Specimen Labradorite, I cut stone of Labradorite.

# DEPARTMENT OF WOODS AND FORESTRY

## By GIFT

HERBERT N. Lowe, Long Beach, Cal.

Large branch holding 7 pine cones
from San Jacinto Mountains, and
3 branches of pine with cones attached, from Pelican Bay, Santa
Cruz Island, Cal.

C. HART MERRIAM, Washington, D. C.
3 Specimens California lilac (Ceanothus thyrsiflorus), 2 specimens California cascara or Posse-berry (Rhamnus californica), 1 specimen tanbark oak (Quercus densiflora), 1 specimen hazel (Corylus californicus).

MRS. RUSSELL SAGE, New York City. Small branch with cone, from a pine tree 2,000 to 3,000 years old, growing in Palestine.

## DEPARTMENT OF INVERTE-BRATE ZOÖLOGY

#### INVERTEBRATES

## By GIFT

F. S. Allen, St. Petersburg, Fla. Water-oak-gall, St. Petersburg, Fla.

John W. Angell, New York City. 18 Specimens insects, New York City and Natal, Africa; 137 specimens Coleoptera and Orthoptera, various localities.

Anonymous.

Vial of myriapods, Chapada, Province of Matte, Brazil.

AQUARIUM Society, transfer from Department of Ichthyology. 2 Crayfish, 2 myriapods.

WILLIAM BARNES, Decatur, III.
Female Eurymus harfordii, California.

JOHN H. BARNHART, Bronx, N. Y. A partly identified collection of invertebrates, various localities.

J. BEQUAERT, New York City. 22 Specimens Coleoptera, various localities.

C. WILLIAM BEEBE, New York City. Crab, Bartica District, Georgetown, British Guiana; myriapods, Utinga, Brazil.

FERD. BERND, Macon, Ga. 6 Boll-weevils, Harris County, Pa.

HENRY BIRD, Rye, N. Y.

Ammophila pictipennis, Rye, N. Y.;

paratype of Papaipema polymniæ

Bird, Roslyn, Va.

CAPTAIN BENOIT BOLAND, Halifax, N. S. Collection of invertebrates from Atlantic cables.

R. L. Bridgman, New York City. About 1,000 insects, various localities.

BARNUM Brown, New York City.
2 Crayfish and other invertebrates,
Winnipeg, Manitoba; I Cicada, Sas-

katchewan.

E. C. Brown, Copake, Columbia County,

N. Y.
2 Fresh-water clams and I vial of plankton, Price County, Wis.

Mrs. Frank Brown, Port of Spain, Trinidad. 9 Insects, Port of Spain, Trinidad.

Albert E. Butler, New York City. 600 Insects, Estes Park, Colo.

 B. Preston Clark, Boston, Mass.
 87 Lepidoptera, North and South America; 120 Bees, Alaska; 477 Lepidoptera, Santo Domingo.

JAMES L. CLARK, New York City. Several myriapods and insects, Yatta Plains, British East Africa.

L. V. COLEMAN, New Haven, Conn. Collection of insects, North, Central and South America.

SR. JULIUS M. CONESA, Ponce, P. R. Pupa of Papilio, vicinity of Ponce.

HENRY E. CRAMPTON, New York City.
A portion of the Roberts Collection of Aquatic Coleoptera.

M. D. C. CRAWFORD, Nyack, N. Y. Live pupa of C. Regalis, Nyack, N. Y.

WILLIAM T. DAVIS, New Brighton, S. I. 4 Cicada sordidula, Big Pine Key and Parish, Fla.; Coleoptera and a paratype of Cicada texana, various localities; a portion of the Roberts Collection of Aquatic Coleoptera.

Mario de Moya, Sanchez, R. D., Santo Domingo.

22 Insects of various orders, Sanchez.

DEPARTMENT OF ICHTHYOLOGY, Transfer.
4 Centipedes, I Scorpion, I Spider,
Miraflores, Cal.

E. L. DICKERSON, Nutley, N. J. 7 Specimens of Nitidulidæ, N. J.

RICHARD DOUGLAS, Absecon, N. J.
Myriapods and arachnids, South
Africa.

R. P. Dow, Brooklyn, N. Y. 6 Coleoptera, various localities.

Miss Ana L. Dumois, Santiago, Oriente, Cuba. Euchinoid and various seeds, Nipe

Euchinoid and various seeds, Nipe Bay, Oriente Province, Cuba. CHARLES FALKENBACH, New York City.

4 Crabs, I starfish, City Island. H. C. FALL, Pasadena, Cal.

Cotype of Calosoma tristoides, San Diego, Cal.

Gonzalo E. Fernandez, Ithaca, N. Y. 23 Specimens, chiefly Lepidoptera, Costa Rica.

G. CLYDE FISHER, New York City. 129 Insects, mostly Lepidoptera, Florida.

Frederick Hagen, Sanchez, R. D., Santo Domingo.

38 Insects of various orders, Sanchez.

GAYLORD C. HALL, New York City.

12 Lepidoptera, North America; 6,000 insects of various orders, Georgia and Alabama. Collected by Mr. F. E. Watson.

D. P. HARRIS, New York City. Luna-moth, Nova Scotia.

EDWARD D. HARRIS, New York City. A portion of the Roberts Collection of Aquatic Coleoptera; 183 Coleoptera; 50 miscellaneous insects.

WILLIAM HASKEY, New York City. String of egg-cases.

A. HERMANN, New York City.

Ascaris and fragments of tapeworm,
from Japanese spaniel, New York
City.

HERE.

JOHN Hiscox, New York City. Hard-shell crab, very large specimen, weighing 7¼ pounds.

C. L. Holmes, Waterbury, Conn. Lampyrid, Centralia, Pa.; 8 Cocoons,

South Carolina.

ELBERT A. HOLT, Jr., Montgomery, Ala. 2 Corydalis, 11 Lepidoptera, Montgomery, Ala.

L. Hussakof, New York City.

2 Specimens of *Peripatus* sp., Kingston, British Guiana.

F. M. Jones, Wilmington, Del. 16 Lepidoptera, eastern United States.

WILLIAM KESSLER, New York City.
Small collection of local insects; 6
Crustaceans, City Island and Rockaway Beach, N. Y.

A. B. Klugh, Kingston, Ontario. 5 Vials of myriapods, Muskoka, On-

tario.

J. B. KNAPP, New York City. 32 Insects, Connecticut and California.

C. C. LAWHORN, Brooklyn, N. Y. 164 Insects, mostly Coleoptera, Rio de Janeiro, Brazil.

THEODORE LEHMANN, Santa Barbara, Cal.

93 Lepidoptera, Florida.

C. W. LENG, New York City.

A portion of the Roberts Collection
of Aquatic Coleoptera and 49 other

specimens of Coleoptera.

E. G. Love, New York City.
A portion of the Roberts Collection of Aquatic Coleoptera.

E. A. Man, New York City Cicada shell, Long Island, N. Y.

Walter C. Mathias, Portland, Oreg. 11 Insects, 2 biological specimens, Washington and Oregon.

DWIGHT C. MINER, New York City. 2 Vials of myriapods, New York City.

WILLIAM G. Moore, S.S. Metapan, United Fruit Company. 7 Insects, Costa Rica.

Rev. A. Miles Moss, Helm Windermere, Eng.

2 Wasp nests, Pará, Brazil.

L. L. MOWBRAY, New York City. Six-foot sponge, Grand Turk, B. W.I.; collection of Cerions and other land shells, Turks Islands, B. W. I. Lewis J. Nagele and Frank Nagele, New York City.

3 Molting crabs.

MISS MARGUERITE NEILSON, New York City.

5 Small shells and I sand dollar.

New York AQUARIUM, New York City. Large lobster.

Francis Childs Nicholas, Nogales, Ariz.

10 Arachnids and insects, Nogales, Ariz.

John Treadwell Nichols, New York City.

5 Vials of myriapods, Washington, D. C., and Portland, Oreg.

Howard J. Notman, Brooklyn, N. Y. Collection of myriapods and arachnids.

CHRIS E. OLSEN, New York City.

4 Vials of myriapods and crustaceans, Maspeth, L. I., and Ocean County, N. J.; I paratype of Stegaspis viridis, Port of Spain, Trinidad; 80 insects, various localities.

Mrs. L. E. Opdycke, Bar Harbor, Me. Moth, Bar Harbor, Me.

NORMAN L. ORME, JR., Puerto Plata, R. D., Santo Domingo.

75 Insects of various orders, Puerto Plata.

HENRY FAIRFIELD OSBORN, New York City.

2 Specimens insect borings in stored paper, Washington, D. C.

R. Ottolengui, New York City.

29 Lepidoptera, 8 Diptera, 10 Hymenoptera, United States and Canada; a portion of the Roberts Collection of Aquatic Coleoptera; 3 specimens of *Chionabas katahdin*, Mt. Katahdin, Me.

John L. Ришлея, Transfer from Department of Herpetology. Centipede, Barahona, Santo Domingo.

Mrs. L. M. Phillips, New York City. Coral and 4 shells.

C. L. POLLARD, New Brighton, S. I. 2 Lepidoptera, Mt. Washington, N. H.

B. VAN D. Post, Washington, D. C. Beetle, Bosphorus.

C. N. READER, New York City. Arachnids and myriapods, Texas. A. R. ROBINSON, New York City. Tick, Jeffersonville, N. Y.

H. L. ROPER, New York City. Hymenopteran nest, Upper Amazon

region.

J. A. Samuels, New York City. Bee and nest, 3 jars of gastropod mollusks and about 20 ticks from toads and snakes sent to the Department of Herpetology from Dutch Guiana.

JOHN D. SHERMAN, JR., Mt. Vernon, N. Y.

A portion of the Roberts Collection of Aquatic Coleoptera.

E. Shoemaker, Brooklyn, N. Y. 16 Coleoptera.

Mrs. Annie Trumbull Slosson, New York City.

A portion of the Roberts Collection of Aquatic Coleoptera.

HENRY A. SMITH, Saugatuck, Conn. Chrysalis shell and parasite, Saugatuck.

E. B. SOUTHWICK, New York City. 5,000 Insects, numerous pieces of insect work and numerous insecticides.

Dr. Stollwitz, New York City.
Collection of shells, corals and sponges.

A. H. STURTEVANT, New York City. Numerous insects, various localities.

Louis W. Swett, West Somerville, Mass.

7 Geometrids, including 5 paratypes, North America.

HENRY THURSTON, New York City.
2 Lepidoptera, Floral Park, L. I.; I syntomid, British Guiana.

Anton Tittels, Long Island City, N.Y. Pycnogonid, Tybee Island, Ga.

A. L. Treadwell, Poughkeepsie, N. Y. 94 Vials of identified annulates.

UNITED STATES DEPARTMENT OF AGRICULTURE, Washington, D. C.

Life-history series of Mayetiola destructor Say; adults of Polygnotus hiemalis Forbes, Merisus destructor Say, Tetrastichus carinatus Forbes and Eupelmus allynii French. Collected by Messrs. McConnell and Myers.

Frank E. Watson, New York City. 63 Insects, vicinity of New York City.

WILLIAM H. WEEKS, Brooklyn, N. Y. 2 Specimens of *Balanus tintinabulum*, Sierra Leone.

HARRY B. Weiss, New Brunswick, N. J. Dendrolium weevil and its work, also Vicitoreicium japonicum as an insect catcher; life history and work of Monarthropalpus buxi, New Jersey; 2 castorids, South America; numerous specimens of insects and insect work received at various times during the summer; numerous specimens illustrating economic entomology, economic insects and insect work.

MISS ELIZABETH WHITE, New York City.

9 Echinoderms and 1 crab, Azores.

L. B. Woodruff, New York City. 6 Anthonomus grandis.

W. S. WRIGHT, New York City. 4 Lepidoptera, California.

CARL H. ZEUMER, Hamburg-American S.S. Company. Jar of barnacles, Colon Bay, Panama.

#### By Exchange

Durban Museum, Natal, Africa. 60 Insects, Africa.

LELAND STANFORD JUNIOR UNIVERSITY, Stanford University, Cal.

Collection of crustaceans, echinoderms, shells, annulates and other invertebrates, Pacific Grove, Cal., and Puget Sound, Wash.

## By Purchase

Small collection of insects in alcohol and cotton, Tucson, Ariz.

600 Specimens of Anosia plexippus.

95 Beetles, Florida.

600 Specimens of Anosia plexippus. 7,500 Specimens of Coleoptera, various

localities.

About 2,500 specimens of Coleoptera,

Guadeloupe.

General collection of insects, various

About 200 insects, mostly bees, Guatemala.

78 Lepidoptera.

Portion of Roberts Collection of Aquatic Coleoptera.

20 Specimens of Hemiptera.

- 64 Lepidoptera and I lantern-fly, Rio Amazon.
- 221 Insects of various orders, Webber Camp, Catalina Mountains, Ariz.
- 5 Models of Membracidæ constructed by the late Ignaz Matausch.
- Model of *Cimex* constructed by Chris E. Olsen.

## THROUGH MUSEUM EXPEDITIONS

- I Scolopendra and various insects, Utuado, P. R. Collected by H. E. Anthony.
- II Vials of shells, myriapods, worms and crustaceans, San Lorenzo, Sanchez and Puerto Plata, Santo Domingo. Collected by Clarence R. Halter.
- 20,000 Insects, Arizona, California and Utah. Collected by Frank E. Lutz and J. A. G. Rehn.
- 27 Vials of myriapods, Arizona. Collected by Frank E. Lutz.
- 1,884 Myriapods, and various insects and spiders, Fulton Chain of Lakes, Adirondacks, N. Y.; marine invertebrates, Nahant and Pigeon Cove, Mass.; 13 vials of myriapods, New York and New Jersey. Collected by Roy W. Miner, Chris E. Olsen and Show Shimotori.
- I Lithobius sp., Pine Ridge Indian Reservation, S. D.

## MOLLUSKS

## By GIFT

- J. H. BARNHART, Bronx, N. Y. 1,050 shells.
- GRAHAM F. BLANDY, New York City. 4 Abalone shells, I Chiton, I sea pearl clam, all polished.
- J. Howard Bridge, New York City.
  Series of shells of common scallop,
  gathered on half a mile of shore
  opposite Chatham, Cape Cod, selected to show color variations of
  the species in a restricted area.
- BARNUM BROWN, New York City. A collection of *Naiades*, Manitoba.
- HARRY WHITING BROWN, Glendale, Ohio. 2 Specimens Murex marcouensis, Sowerby.

- W. S. CHAPMAN, St. Petersburg, Fla. Shell and egg-case ribbon of Fasciolaria gigantea, Florida.
- Russell J. Coles, Danville, Va. Mollusk, Cape Lookout, N. C.
- GERARD P. HERRICK, New York City. 112 Specimens of Unionidæ (pearl oysters).
- Frederick F. Hunt, New York City.
  8 Specimens Chiton granulatus on rock, 1 Melongena corona, Lorsmann's River; 25 Modiolus papyria, Barnes Sound, Fla.
- L. Hussakof, New York City. 50 Shore shells, Captive Islands, Fla.
- MISS EDITH KUNZ, New York City.
  Egg-case ribbon of a gastropod,
  Tampa Bay, Fla.
- GEORGE C. LONGLEY, Pelham Manor, N.Y. 100 Miscellaneous Long Island shore shells.
- Russell Hastings Millward, New York City.
  - 377 Sea shells from English Cave, Coast of Honduras.
- James B. Quinichett, New York City. Small bottle containing 133 oyster concretions.
- Fred. Tableman, Newark, N. J.
  60 Specimens Planorbis bicarinata Say,
  Cable Lake, West Orange, N. J.;
  collection of Unio complanatus
  Dillwyn, Rahway River, Union Co,
  N. J.
- WILLIAM D. WENZLAU, Hoboken, N. J. 3 Specimens of *Unio complanatus* Dillwyn.
- MISS ELIZABETH WHITE, New York City. Land shells from the Azores.
- DAVID WHITEHALL, New York City.
  41 Polished Abalone blisters, 17
  polished Meleagrina disk blisters, 1
  gold mounted lavallière.

#### By Exchange

HERBERT N. Lowe, Long Beach, Cal. 345 Land and marine shells, California.

#### By Purchase

- Design in black and white on Meleagrina margaritifera (sea pearl clam). Drawn by H. Papke.
- 20 Specimens of Deformed Cypræa lynx.

- 3,000 California marine and land shells. 10 Polished *Unios*.
- 29 Fossil Cephalopoda.
- 51 Species for Molluscan Provinces in Shell Hall.

# DEPARTMENT OF ICHTHYOLOGY AND HERPETOLOGY

#### FISHES

## By GIFT

- AQUARIUM SOCIETY, New York City. Lion-head Goldfish and 5 other aquarium fishes.
- HOWARD S. BOYLE, New York City.
  4 South American Catfish, Tikara,
  Argentine.
- E. CLIVE Brown, Copake, Columbia Co., N. Y.
  - Io Log Perch, White Sucker, Redfin and Mud Minnow, Price County, Wis.;
     I Rudd, 2 Broad Killifish, 3 Sucker eggs,
     2 Suckers, Robinson Lake, Columbia Co.,
     N. Y.
- Russell J. Coles, Danville, Va. ½ Barrel of fishes, Cape Lookout, N. C.
- C. S. Davison, New York City. Sea-trout, New Brunswick, Canada.
- DEPARTMENT OF ANTHROPOLOGY, Transfer.
  - Sawfish, off New South Wales.
- DEPARTMENT OF INVERTEBRATE ZOÖLOGY, Transfer. 5 Mousefish, 20 Sundials, 6 Spined
  - 5 Mousefish, 20 Sundials, 6 Spined Dogfish, 30 Top Minnows, 6 Miscellaneous fishes, Porto Rico.
- DEPARTMENT OF MAMMALOGY, Transfer. 12 Fishes, Province of Cochabamba, Bolivia.
- DEPARTMENT OF VERTEBRATE PALÆON-TOLOGY, Transfer.
  - Small lot of vertebræ, scales and other fish remains from the Bridger formation, Bridger Basin, Wyo.; 3 fossil fish remains from the Cretaceous of Alberta, Canada.
- F. M. DYER, New York City.
- 2 Shark jaws, off Provincetown, Mass.
- OTTO FALKENBACH, New York City. Clear-nosed Skate, City Island, N. Y.
- John D. Haseman, New York City. Several concretions containing fish remains, Province of Ceará, Brazil.

- Vernon Kano, New York City. Smooth Dogfish, off Execution Lighthouse.
- Frederic H. Kennard, Newton Center, Mass.
  - Nine-spined Sunfish, Newton Center.
- WILLIAM KESSLER, New York City.
  Egg cases of common Skate, egg
  cases of large Skate, Sand Launce,
  Pipefish, Rockaway Beach; 15 common Anchovies, Fort Washington,
  N. Y.
- WILLIAM V. KING, New York City. Swordfish sword.
- ROY LATHAM, Orient, L. I. Common Anchovy, Filefish, 12 fishes from Orient, L. I.
- J. V. LAUDERDALE, Brooklyn, N. Y. 62 Fossil fishes, fish spines, teeth and other remains, Linton (now Yellow Creek), Ohio.
- F. A. Lucas, New York City. Large Yellow Perch, 1 head of Small-mouthed Bass, Plymouth, Mass.
- WILLIAM H. MARDOCK, New York City. Sting-ray spine, Santarem, Amazon River.
- HORACE R. MOORHEAD, Bronxville, N. Y. Specimens of *Priscacara pealei* Cope, Green River Eocene, probably near Fossil, Wyo.
- Lewis J. Nagele and Frank Nagele, New York City. Flounder, New York Market.
- New York Aquarium, New York City. Large Sand Shark, Selford, N. J.; 2 Climbing Perch, 3 Catfishes, 65 fishes from Key West, Fla.; Deepwater Dogfish, off New York in 125 fathoms; 12 Long-nosed Gar Pikes, Salisbury, Md.
- John Treadwell Nichols, New York City.
  - 5 Fish specimens from Moriches Beach, L. I.
  - THOMAS McClure Peters, Oyster Bay, L. I.
  - I Young Mackerel, Oyster Bay, L. I. EDWIN THORNE, Babylon, L. I.
- 5 Ground Shark jaws, Babylon, L. I.
- CARL H. ZEUMER, Hamburg-American Steamship Company.
  - Sharp-nosed Shark, 2 tropical Swell-fish, Shark Sucker, Colon Bay, Panama.

### By Exchange

U. S. NATIONAL MUSEUM, Washington, D. C.

2 Great Bear Lake Sculpins, Lake Bennet, Alaska.

### By Purchase

I Fossil fish, Fossil, Wyo.

2 Sawfish saws.

Specimen of *Belonostomus comptoni*, in counterpart, from Cretaceous stratum of the Province of Ceará, Brazil.

Cast of White Shark, Provincetown, Mass.

3 Fossil fishes from Florissant, Colo. Small lot of shark teeth from the Carboniferous of Kansas.

## THROUGH MUSEUM EXPEDITIONS

5 Minnows and 17 Top-minnows, near Tucson, Ariz. Collected by Frank E. Lutz.

# AMPHIBIANS AND REPTILES

## By GIFT

H. E. Anthony, New York City. Small collection of frogs, lizards and snakes, Adjuntas, Porto Rico.

W. H. Ballou, New York City. Box Turtle, Saxon Woods, Westchester Co., N. Y.

C. WILLIAM BEEBE, Bronx, N. Y.
11 Toads and frogs, 144 lizards, 14
snakes, Bartica District, British
Guiana.

Miss A. K. Berger, New York City. 2 Salamanders, Woodstock, N. Y.

Graham F. Blandy, New York City. Tortoise, Nassau, Bahama Islands.

G. A. Boulenger, London, England. 4 Frogs, 7 snakes, Choco, Colombia.

CHARLES L. CAMP, New York City. Salamander, 2 snakes, Berkeley, Cal.

JOHN LEWIS CHILDS, Incorporated, Flowerfield, L. I. Snapping Turtle, Flowerfield.

Morton L. Church, Marshall, N. C. 3 Toads, 8 frogs, 33 salamanders, 1 turtle, 1 snake, Marshall, N. C.

HENRY E. CRAMPTON, New York City. Salamander, Estes Park, Colo.

CAPTAIN M. L. CRIMMINS, Columbus, N. Mex.

2 Green Rattlesnakes, El Valle, N. Mex.

WILLIAM T. DAVIS, New Brighton, S. I. 3 Salamanders, Batavia, N. Y.

DEPARTMENT OF ANTHROPOLOGY, Transfer.

Boa Constrictor, Colon Bay, Panama.

Department of Invertebrate Zoölogy.

Transfer.

2 Salamanders, 2 toads, Heartwell-ville, Vt.; 4 salamanders, Massachusetts; 4 salamanders, 2 frogs, New York, New Jersey and Canada; 1 lizard, British West Indies; 6 toads, 39 frogs, 19 lizards, 11 snakes, West Indies, British Guiana, Brazil; 2 cœcilians, 3 cœcilian eggs, 1 lizard, 1 snake, South America.

DEPARTMENT OF ORNITHOLOGY, Transfer. 12 Lizards, Rhodesia, South Africa.

DEPARTMENT OF PARKS, New York City.
I Snake, New York; 2 lizards, South America.

ROBERT FLEMING, Pineland, Jasper County, S. C.

49 Frogs, 2 toads, 5 snakes, Pineland, Jasper County, S. C.

A. L. GILLAM, Flushing, L. I.

20 Green Tree Frogs, 11 Southern Leopard Frogs, 21 Cricket Frogs, 6 Bullfrogs, 2 Narrow-mouthed Toads, 22 Oak Toads, 41 Southern Toads, 10 Gopher Turtles, 2 Box Turtles, 1 Terrapin, 1 Mud Turtle, 1 Soft-shelled Turtle, 3 Red-headed Lizards, 6 Race Runners, 9 "Chamæleons," 29 young alligators, 6 adult alligators, 1 alligator nest, 17 Water Snakes, 1 Garter Snake, 1 Ribbon Snake, 15 Black Racers, 2 Coach-whip Snakes, 4 Corn Snakes, 1 Hognosed Snake, 2 Scarlet Snakes, 9 Green Tree Snakes, 1 Ring-necked Snake, 1 Coral Snake, 10 Water Moccasins, 9 Diamond Rattlesnakes, 4 lots of Eggs of turtle, snake and alligator, Eau Gallie and Canaveral, Fla.; 1 Red-headed Lizard, Sterling Lake, N. Y.

CHAPMAN GRANT, New York City. I Toad, I lizard, I snake, Texas.

LORENZO HAGGLUND, South Bethlehern,

I Salamander, Lewis, Adirondacks, N. Y.

H. HAUPT, Jr., South Haven, Mich.

1 Pickering's Hyla, South Haven,
Mich.

A. Hermann, New York City.

18 Horned Toads, 4 Holbrookia, 7
Collared Lizards, 2 Zebra-tailed
Lizards, 3 lizards, Texas, Wyoming
and New Mexico.

Emory Hutchinson, Winona Lake, Ind. 8 Turtles, Winona Lake.

JOHN C. JACOBS, San Antonio, Tex. I Lizard, Guadalupe River, east of San Antonio.

A. G. Jenkins, Mount Vernon, N. Y. 2 Snakes, Juma River, Brazil.

IRVING M. KETCHAM, Glen Head, L. I. 2 Salamanders, Glen Head; 2 salamanders, 6 frogs, East Norwich, L. I.

ROBERT LEWIS, New York City.

2 Red-bellied Snakes, Munsonville,
N. H.

Miss Adelaide Miller, Interlaken, N. J. I Box Turtle, Deal Lake, N. J.

W. DEW. MILLER, New York City. I Frog, Metuchen, N. J.

WILLIAM MOORE, New York City. 2 Snakes, Port Limon, Costa Rica.

New York Aquarium, New York City.

1 Terrapin, 1 Hawk's-bill Turtle, Florida; 1 Kemp's Loggerhead, Gulf of Mexico; 2 turtles, South America.

New York Zoölogical Society, New

York City.

I Hog-nosed Snake, I Pilot Black Snake, Connecticut; I Green Snake, 2 Copperheads, I Ground Rattlesnake, 3 Banded Rattlesnakes, New York; I Pine Tree Frog, I Tree Frog, 2 Bullfrogs, I Red-headed Lizard, 2 "Chamæleons," 2 Race Runners, 2 Swifts, 7 Water Moccasins, 2 Copperheads, I Garter Snake, 2 Banded Rattlesnakes, 3 Redbellied Snakes, I Rainbow Snake, I Black Racer, 15 Water Snakes, 4 Hog-nosed Snakes, 4 Chicken Snakes, 4 Corn Snakes, I King Snake, I Ground Rattlesnake, South Carolina; I Copperhead, Virginia; 2 alligators, I Chicken Snake, I Corn Snake, I Gopher Snake, I Water Snake, I Gopher Snake, I Water Snake, I Ground Rattlesnake, 2 Diamond Rattlesnakes, Florida; 4 salamanders, Ohio; I Ribbon Snake.

I Gopher Snake, I Rattlesnake, I Holbrookia, Texas; I Gila Monster, I Collared Lizard, 2 Bull Snakes, 2 Coachwhip Snakes, 1 Coluber, I Horned Rattlesnake, Arizona; I Diamond-back Terrapin, 2 King Snakes, California; I Redfooted Gopher Tortoise, I Bushmaster, 3 Variegated Rat Snakes, 2 Golden Tree Snakes, I South American Water Snake, I Cuban Boa, Io miscellaneous lizards, 20 miscellaneous snakes, British West Indies; I Boa Constrictor, Central America; 3 turtles, 7 lizards, I Tree Snake, I Rattlesnake, I Fer-de-lance, 3 miscellaneous snakes, British Guiana; 3 Iguanas, I Boa, 6 Vipers, Brazil; I Crocodile, 7 snakes, South America; 4 lizards, 5 Carpet Snakes, 4 Black Snakes, 2 Tiger Snakes, 3 miscellaneous snakes, Australia; I Radiated Tortoise, Madagascar; 2 lizards, South Africa; I snake, Asia; 2 turtles, I crocodile, I Iguana, I Gila Monster, I Desert Tortoise, I Rattlesnake, localities doubtful.

JOHN TREADWELL NICHOLS, New York City.

i Box Turtle, Long Island; i Hognosed Snake, Michigan; 5 Wood Frog Tadpoles, West Englewood, N. J.

 A. M. Nicholson, Orlando, Fla.
 3 Terrapins, 1 Mud Turtle, 5 Gopher Turtles, 1 Coachwhip Snake, 9 Water Moccasins, Orlando, Fla.

C. E. Olsen, New York City.

2 Tree Frogs, Ocean County, N. J.

NORMAN L. ORME, Puerto Plata, Santo Domingo.
10 "Chamæleons."

C. E. PATTON, Wray, Colo.

2 Frogs, I toad, 3 lizards, 2 snakes, Wray.

John J. Paul, Watertown, Fla. I Scarlet Snake, Watertown.

Philip H. Pope, Manchester, Me. 4 Frogs, Manchester, Me.; 8 frogs, 3 lizards, Bermuda.

CHARLES H. ROGERS, New York City. Several tadpoles, West Englewood, N. J.

E. C. SLIPHER, Flagstaff, Ariz. 6 Salamanders, Flagstaff, Ariz.

MALCOLM A. SMITH, Bangkok, Siam. 16 Frogs, 4 cœcilians, 34 lizards, 22 snakes, Siam.

Henry Snyder, Scarsdale, N. Y. Albino Frog, Scarsdale, N. Y.

LESLIE SPIER, New York City. Snake, Zuñi, New Mexico.

A. Thomson, New York City. Western Milk Snake, Blue River, Neb.

HERMAN WEBER, New York City. Box Turtle, New York.

BEN H. WOOD, Englewood, N. J. Salamander, Catskill Mountains, N. Y.

## By Exchange

U. S. NATIONAL MUSEUM, Washington, D. C.

Amphisbænian, Bayamon, Porto Rico.

## By Purchase

6 Live alligators, just hatched, ½ dozen shells from which alligators came, Jacksonville, Fla.

2 Frogs, 7 lizards, Padra Island, Brownsville, Tex.

- 7 Toads and frogs, 4 Mobile Terrapins, 8 Florida Terrapins, 2 Longnecked Terrapins, 2 Soft-shelled Turtles, 1 Alligator Snapper, 19 Keeled Musk Turtles, 6 Gopher Tortoises, 3 Florida Box Turtles, 2 Blind Worms to Feed Lived. Blind Worms, 13 Fence Lizards, 7 Ground Swifts, 1 Scarlet Snake, 1 Rainbow Snake, 1 Yellow Chicken Snake, 1 Red-bellied Snake, 1 Corn Snake, 8 live alligators and 8 living eggs of alligators, Eureka, Marion County, Fla.
- 6 Terrapins, Orlando, Fla.

18 Larvæ Ant-lions, Orlando, Fla.

- 33 Toads and frogs, 2 turtles, 66 lizards, 46 snakes, Paramaribo, Dutch Guiana.
- 6 Snakes, Everglade, Fla.

#### THROUGH MUSEUM EXPEDITIONS

2 Toads, 13 frogs, 2 salamanders, 7 turtles, 4 alligators, 5 snakes.

861 Salamanders, 88 toads and frogs, 9 turtles, 7 lizards, 42 snakes and 2 lots of reptile eggs, North Carolina. Collected by E. R. Dunn. 10 Frogs, 3 lizards, 19 snakes, China. Collected by R. C. Andrews.

1 Salamander, 2 frogs, 8 lizards, 2 Boa Constrictors, 11 Colubrine Snakes, 1 Coral Snake, 4 Pit Vipers, Province of Cochabamba, Bolivia; 7 frogs, Argentina. Collected by Leo E. Miller and Howarth S. Boyle.

## DEPARTMENT OF MAMMALOGY AND ORNITHOLOGY

#### MAMMALS

## By GIFT

Anonymous. Horse, Glen Head, L. I.

A. W. Anthony, Ironside, Oreg. 2 Skeletons of Black-tailed Jack Rab-

Louis B. Bishop, New Haven, Conn. 14 Small mammals from North Da-kota; 5 mammals from Connecticut, 2 from Canada, 2 from Algeria, I from North Carolina, I from Florida.

FREDERICK BLASCHKE, Cold Spring, Putnam Co., N. Y. 5 Skins of Weasels, Cold Spring, N. Y.

Charles W. Carson, Tappan, N. Y. 2 Jumping Mice, Tappan.

JAMES P. CHAPIN, New York City. Mouse in flesh.

JOEL ALLEN CHERRIE, Newfane, Vt. Porcupine.

COLLEGE OF PHYSICIANS AND SURGEONS, New York City. Skeleton of negro.

CAPTAIN M. L. CRIMMINS, U. S. A. Ground Squirrel, Namiquip, Mexico.

DEPARTMENT OF ANTHROPOLOGY, Transfer.

Fossil mammal bones, from Porto Rico cave excavations.

DEPARTMENT OF HERPETOLOGY, Transfer. 2 Fawns in alcohol, Paramaribo, Dutch Guiana. Collected by J. A. Samuels.

DEPARTMENT OF INVERTEBRATE ZOÖLOGY, Transfer.

2 Bats in alcohol, Tropical America. Collected by Frank E. Lutz.

5 Bats in alcohol, Porto Rico. Collected by Henry E. Crampton.

1 Bat in alcohol, Texas. Coll

by C. W. Leng.

DEPARTMENT OF PARKS, New York City. Skeleton of Mongoose, skin and skeleton of Buffalo, skeleton of Nilgai, Elk skeleton, Porcupine skeleton, Monkey skin and skeleton and Gray Fox skeleton.

DEPARTMENT OF PUBLIC EDUCATION, Transfer.

37 Mice (37 skins and 33 skulls).

J. DIXON, New York City.

Armadillo in flesh, McAllen, Texas. Jonathan Dwight, New York City. Lower jaw of Walrus, Sable Island.

CARLOS D. EMPIE, New York City. Brown Bat.

J. Alpin Graydon, New York City. Newfoundland Dog in flesh.

BERTRAM J. HALL, Hudson, N. Y. Rabbit skin and skull.

ARCHIBALD HARRISON, Aiken, S. C. Albino Virginia Deer skin, with skull and leg bones, Ball's Island, S. C.

Francis Burton Harrison, Manila, P. I.

Skin of Tamarau, Mindoro, P. I. Mrs. C. F. Holder, Pasadena, Cal. 2 Sections of tusk of "Jumbo."

V. H. JACKSON, New York City. Thoroughbred Boston Bull Terrier, 10 years old (for skeleton).

Brother Apolinar Maria, Bogotá, Colombia.

15 Specimens of small mammals, Region of Bogotá.

LEIGHTON MESERVE, New York City. Chipmunk melano, Bridgton, Me.

W. DEWITT MILLER, New York City. Red Squirrel, Andover, N. J.

NEW YORK ZOÖLOGICAL SOCIETY, Bronx, N. Y.

Nilgai skeleton, Phalanger skin and skeleton, 3 Coypu Rats (2 skins and 3 skeletons), Tree Kangaroo skin and skeleton, Giraffe skeleton, Wallaby, Ibex skeleton, Leopard skin and skeleton, 2 Antelope skins and skeletons, I Gibbon skin and skeleton, 2 Muskox skins and skeletons, Siberian Tiger skin and skeleton, I Cross Fox with leg bones and I Sloth Bear skin and skeleton.

JOHN TREADWELL NICHOLS, New York City.

Skeleton of New York Weasel in flesh, Long Island. RICHARD RATHBORNE, Bernardsville, N. J. Woodchuck in flesh, Bernardsville, N. J.

MISS ANNE E. ROELKER, New York City. Pair of antlers (Moose), reputed to have been obtained by John J. Audubon in Maine.

CHARLES SCHAEFER, North Bergen, N. J. Albino Squirrel, mounted, Lafayette, N. J.

H. H. Sheldon, Homestead, Oreg.3 Skins of Mice, 5 miles northwest of Hooper, Colo.

George Shiras, 3d, Washington, D. C. Moose skin and skull, Canada.

W. A. VAN RENSSELAER, Salt Point, N. Y.

Belgian Hare in flesh, Salt Point.

WILLIAM D. WENZLAU, Hoboken, N. J. Mole, Hoboken, N. J.

WILLIAM H. WHITE, Cold Spring Harbor, N. Y. 2 Tusks of Pacific Walrus, Bering

Sea.
WALTER WINANS, Surrenden Park,
Pluckley, Kent, England.
White Bull (Chillingham Wild Bull,

skin, skull and leg bones), England.

#### By Exchange

BROOKLYN MUSEUM, Brooklyn, N. Y.
2 Skins with skulls of Leporida,
Lower California.

J. D. Figgins, Denver, Colo.

2 Woodchucks (skins and skulls), Colorado.

Museum of Comparative Zoölogy, Cambridge, Mass.

9 Shrews and Moles, Siberia.

## By Purchase

1016 Specimens of North American Mammals, skins and skulls, western United States.

Figure of African.

5 Enlarged models in plaster of heads of bats.

Mountain Goat kid, Montana.

11 Skins, with skulls, of South American Monkeys.

Forearm and hand of a man, and forearm and hand of a beaver (bones).

Commercial skin of Fur Seal, showing stages in plucking and dyeing.

- Mounted Père David's Deer, China.
- 3 Rocky Mountain Goats and I Blacktailed Deer, Idaho.
- 2 Young Deer in alcohol, Surinam.
- 2 Mammals, Venezuela.

## THROUGH MUSEUM EXPEDITIONS

- 200 Mammals, China. Collected by Roy C. Andrews.
- Fossil mammal, bird and reptile remains, and 491 specimens of bats, skins, skulls and alcoholics, Porto Rico. Collected by H. E. Anthony.
- Skeleton of Three-toed Sloth Bradypus, Costa Rica. Collected by Clarence R. Halter.
- 439 Mammals, South America. Collected by Leo E. Miller and Howarth S. Boyle.

#### BIRDS

### By GIFT

- CHARLES ALLGOEVER, New York City. Quail, Screech Owl and Woodcock in flesh.
- ANONYMOUS.
  - Junco and Canadian Warbler in flesh,
    I Heron skin.
- DAVID S. BALL, New York City. Junco in flesh.
- Frederick Blaschke, Cold Spring, N. Y. Rouen Drake.
- B. S. Bowdish, Demarest, N. J. Head and foot of Holboell's Grebe.
- Courtney Brandreth, Ossining, N. Y. Cockatoo in flesh.
- W. L. Brind, Bergenfield, N. J. Swift in flesh.
- A. D. CHANDLER, New York City. Scarlet Tanager in flesh.
- JAMES P. CHAPIN, New York City. Skull of Cormorant.
- MISS BERTHA B. P. CHITTENDEN, Concord, N. H. Quetzal skin.
- H. K. COALE, Highland Park, Ill. 3 Old World Warbler skins.
- L. G. Cook, Amherst, Mass. Ovenbird in flesh.
- CAPTAIN M. L. CRIMMINS, U. S. A. Rough skin of Mallard.

- HAROLD K. DECKER, New York City. White-throated Sparrow in flesh.
- Department of Parks, New York City.
  8 Quail, I Starling, 30 Song-birds, 2
  Doves, 14 Parrots, 8 Swans, 10
  Geese, I Duck.
- MISS M. C. DICKERSON, New York City. Canadian Warbler.
- JONATHAN DWIGHT, New York City. 30 Mounted local birds, chiefly from Fort Hamilton, N. Y.
- G. CLYDE FISHER, New York City. 2 Mockingbird skins.
- WILLIAM FLOYD, Mastic, L. I.
  Red-breasted Merganser skin, Marsh
  Hawk and Cuckoo in flesh.
- F. E. Ford, Chardon, Ohio. Bird in flesh.
- EDWARD J. FOYLES, New York City. European Goldfinch in flesh.
- Louis A. Fuertes, Ithaca, N. Y. 14 Bird skins from Nicaragua.
- JOHN W. GRIGGS, Paterson, N. J.

  I Tree Duck, I Woodcock, northern
  New Jersey.
- WILSON C. HANNA, Colton, Cal. Nest and set of three eggs of Whitethroated Swift, Colton, San Bernardino Co., Cal.
- J. S. Hendrickson, Flowerfield, L. I. 2 Kingfishers in flesh.
- W. F. HENDRICKSON, Long Island City, N. Y.
  - Buff-breasted Sandpiper skin.
- GEORGE E. HIX, New York City.
  Pine Siskin, Thrush and Yellow-bellied Sapsucker, in flesh.
- JOHN HURT, New York City.

  American Goshawk, mounted in glass bell case with accessories.
- A. C. IBBEKEN, New York City. Java Sparrow in flesh.
- Jamaica High School, Jamaica, L. I. Towhee in flesh.
- J. M. Johnson, Brooklyn, N. Y. Brown Thrasher, I Least Sandpiper in flesh.
- Justus Von Lengerke, New York City. 2 Goshawks, 68 Hawks, 2 Red-tailed Hawks, 1 Crow.
- W. B. LEY and CHARLES A. URNER, Elizabeth, N. J. Hybrid Duck in flesh, Elizabeth, N. J.

W. M. MACARTNEY, Fort Covington, N. Y. Bird in flesh.

Miss N. L. Marshall, New York City. Black-poll Warbler.

EDWARD McGALL, Orange, N. J. Bones of "Cahow."

W. DeW. MILLER, New York City. Herring Gull, Sparrow, Bulbul, Robin, Yellow-crowned Night Heron, Great Horned Owl, Redstart and Vireo in flesh.

Adelaide Mills, New York City. 42 Specimens of mounted birds.

Mogi, Momonoi & Co., New York City. 55 Mounted Birds from Japan.

New York State Conservation Commission, New York City. 2 Bodies of Wood Ducks.

New York Zoölogical Society, Bronx, N. Y.

I Seriema, 3 Vultures, 7 Parrots, 3 Tinamou, 2 Pigeons, 2 Herons, 21 Song-birds, I Penguin, I Secretary Bird, I Pheasant, I Sand Grouse, I Duck, 3 Doves, 5 Owls, 2 Francolins, I Spoonbill, I Quail, 2 Hawks, I Sun-bittern, I Guan, I Flycatcher, 2 Hornbills, I Bird of Paradise, I Rail, I Bustard, I Trumpeter, I Goose, I Woodpecker, I Trogon and I Toucan.

JOHN TREADWELL NICHOLS, New York City.

Black Duck in flesh, body of Hudsonian Curlew, 2 Yellowlegs, 4 Henslow's Sparrows, I Henslow's Sparrow nest, I Green Heron.

S. M. Nyberg, Beaumont, Tex. A number of skins from Sweden.

Mrs. Eula Phipp-Miller, New York City.

Gray Parrot in the flesh.

Mrs. C. R. Prescott, Orange, N. J. Black-poll Warbler in flesh.

Mrs. V. M. Reichenberger, New York City.

I Field Sparrow, I Song Sparrow, I Golden-crowned Kinglet, 2 Rubycrowned Kinglets, 3 Hermit Thrushes, 2 Robins and I Ovenbird.

THOMAS N. RHINELANDER, New York City. Herring Gull in flesh. WILLIAM A. ROBBINS, New York City. Yellow-bellied Sapsucker in flesh.

F. B. Robinson, Newburgh, N. Y. Rough birdskin of Cape May Warbler.

Mrs. Roy Robinson, Englewood, N. J. Black-throated Green Warbler in flesh.

WILLIAM G. ROCKEFELLER, Tarrytown, N. Y.

Olive Pigeon in flesh, Tarrytown.

CHARLES H. ROGERS, New York City.

I House Sparrow, I Horned Grebe,
I Ovenbird, I Dove.

THEODORE ROOSEVELT, Oyster Bay, L. I. Skin of Parrot.

J. A. Samuels, New York City. 2 Specimens of Jacana's eggs.

L. C. Sanford, New Haven, Conn. 3 Skins of Sharp-shinned Hawks, 5 skins of Grouse, I skin of Ptarmigan, I skin of Hawk, 4 birdskins from Brazil, 5 skins of Hummingbirds, 2 skins of Sparrows.

ERNEST SCHERNIKOW, New York City. 5 Skins of Quetzals.

SCIAMA, DAVIS & COMPANY, New York City. 229 Birdskins.

ERNEST THOMPSON SETON, Greenwich, Conn.

Skin of Yellow Rail.

H. F. Stone, Lawrence, L. I.
I Red-backed Sandpiper, 2 Knots, 2 Pectoral Sandpipers, 2 Turnstones, I Semi-palmated Sandpiper, I Sharptailed Sparrow.

ROBERT KENNETH STRAUSS, New York City.

Bird in flesh.

E. B. Thompson, Amenia, N. Y. Barred Plymouth Rock cockerel (Imperial "Ringlet").

HENRY THURSTON, New York City.

I Junco in flesh, I skin of Kingfisher,
I Flicker in flesh, I Yellowlegs in flesh.

CHARLES H. TOWNSEND, New York City. Rough birdskin of Red-shouldered Hawk, and Long-eared Owl in flesh.

HARRY S. TRULL, New York City. Starling in flesh.

MISS VIRGINIA FLORENCE TRULL, New York City. Chickadee in flesh. B. VITOLO, New York City. Ovenbird in flesh.

O. Wilcox, Englewood, N. J. Merganser in flesh, Englewood.

Walter Winans, Surrenden Park, Pluckley, Kent, England. 2 Mounted English Pheasants, Swaffham, Norfolk, England.

LEON WOOLSEY, New York City.

Gyrfalcon.

### By Exchange

S. H. Chubb, New York City. Hairy Woodpecker skin.

JOHN TREADWELL NICHOLS, New York City. Screech Owl in flesh.

DEPARTMENT OF PUBLIC EDUCATION, Transfer. 190 Birdskins.

HENRY THURSTON, New York City. Chimney Swift in flesh.

DEWITT C. WARD, New York City. 2 Skins of Penguins.

Mrs. Mabel Osgood Wright, Fairfield, Conn.

8 Skins of Hawks.

## By Purchase

I Ptarmigan in flesh.

5 Domesticated Pigeons in flesh and 12 mounted Domesticated Pigeons.

187 Birdskins, Peru.

72 Birds, Venezuela.

517 Birdskins from Ecuador.

#### THROUGH MUSEUM EXPEDITIONS

70 Birdskins, 10 skeletons and alcoholics from Porto Rico. Collected by H. E. Anthony.

1,000 Birdskins, South America. Collected by Frank M. Chapman and George K. Cherrie.

I,000 Birdskins, Bolivia, 3,000 birdskins, Argentine. Collected by Leo E. Miller and Howarth S. Boyle.

400 Birds, China. Collected by Roy C. Andrews.

# DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

### By GIFT

AMALGAMATED PHOSPHATE COMPANY, Brewster, Fla.

Part of skull and jaws of fossil crocodilian and cranium of fossil crocodile, Phosphate beds, Brewster.

P. Barnon, New York City. Midget horse in flesh.

H. K. Bush-Brown, Washington, D. C. Lumbar vertebra of half-Arab colt.

M. CRANE COMPANY, New York City. 2 Embryo pigs.

Warren Delano, New York City. Vertebral column of Arabian colt.

EDWARD FETTERBY, New York City. Front foot and hind foot of steer.

New York Zoölogical Society, Bronx, N. Y.

Young gorilla "Dinah."

HENRY FAIRFIELD OSBORN, New York City.

Skin and skeleton of yellow dun horse.

S. H. ROPER, New York City.
Fossil vertebrates from Upper Purus
River, Brazil.

E. L. Troxell, Ann Arbor, Mich. Fossils found with *Pliohippus* skeleton, Rosebud Reservation, S. Dak.

#### By Exchange

GEOLOGICAL SURVEY OF INDIA.
3 Casts of Sivapithecus, extinct anthropoid from Pliocene of India.

Major E. E. Hue, Oklahoma City, Okla. Horse skull with a pair of supernumerary molars, no lower jaw.

UNITED STATES NATIONAL MUSEUM, Washington, D. C.

Casts of *Allosaurus* forelimb, Como Bluffs, Wyo.

YALE UNIVERSITY, New Haven, Conn.
2 Casts of type teeth of *Protohippus*parvulus.

### By Purchase

Celtic horse and Norse horse, Scotland.

Collection from Niobrara Cretaceous, Gove County, Kansas.

Casts of skulls and bones of fossil human remains from European localities.

Skeleton of *Pliohippus*, near Mission, S. Dak.

Skeleton of *Pliohippus*, Snake Creek beds, Sioux Co., Neb.

## THROUGH MUSEUM EXPEDITIONS

In Cretaceous of Montana, 54 boxes of dinosaurs from Two Medicine and Saint Mary's formations, including skeletons of new kinds of Horned and Duck-billed Dinosaurs. Collected by Barnum Brown, P. Kaisen and W. Johnson.

In Paleocene of New Mexico, 4 boxes of fossil mammals from Animas valley and vicinity of Ignacio. Collected by Walter Granger and

George Olsen.

In Eocene of Colorado, I box of fossil mammals from Huerfano valley, including skull of *Tillotherium*. Collected by Walter Granger and George Olsen.

In Eocene of Wyoming, 2 boxes of fossil vertebrates from Big Horn basin, including skeleton of giant bird. Collected by William Stein.

In Tertiary of Nebraska, 11 boxes of fossil mammals from Agate and other points in western Nebraska, including 3 skeletons of Clawed Ungulate Moropus, 25 skulls of Pairhorned rhinoceros and large collection of Pliocene fossils. Collected by Albert Thomson and party.

## DEPARTMENT OF ANTHRO-POLOGY

#### By GIFT

Anonymous.

Revolvers, knife and opium outfit.

H. E. Anthony, New York City. 8 Potsherds, from a mound near Whitefish Lake, near Port Arthur, Ontario.

Albert C. Bates, Hartford, Conn. Splint gauge used in making baskets.

Justice Nathan Bijur, New York City. War shirt of moose hide, Tlingit Indians, Kupreanof Island. Graham F. Blandy, New York City.

2 African baskets, Haida hat, 3 fans, card of leaves and ferns, table cover and 2 lamp shades of fiber, piece of bark, model of slate totem pole, knife and case, Africa, West Indies and Alaska.

Mrs. Theodora Crosby Bliss, Washington, D. C.

Model of hut and model of canoe,

Marshall Islands.

Mrs. William Henry Bliss, New York City.

Large ladle of mountain sheep horn.

HENRI BRINGS, New York City. Stone implements, near Yuruan River, southeastern Venezuela.

E. A. Brockhaus, Bronx, N. Y. Metate, Mexico.

Major E. C. Brooks, New York City. Double whistling bowl, Peru.

A. H. Case, New York City.

Hat, headwaters of the Maya River,

Colombia.

H. E. CRAMPTON, New York City.3 fans and model of a boat, Society Islands.

CAPT. M. L. CRIMMINS, 16th Infantry, U. S. A.

Pair of moccasins, I skull, vicinity of Chihuahua, Mexico.

RALPH CURTIS, Paris, France.
Flint implements decorated with drawings.

CHARLES BATES DANA, New York City. Beaded buckskin coat.

D. Bryson Delavan, New York City. Birchbark receptacle, Mackinaw, Mich.

Miss C. Deutsch, New York City. Archæological specimens and beaded vase, eastern United States.

MISS KATHERINE E. DEVOE, Montclair, N. J.

Mexican bowl, Chihuahua, Mexico.

I. WEYMAN DRUMMOND, New York City. 3 Ax heads, 3 copper points, scalping knife, Wisconsin, Tennessee and New York.

MISS MARGARET H. ELLIOT, New York City.

4 Baskets, medicine rattle, pipe, five spoons and shark hook, Alaska; rhinoceros shield, whip and 4 spears, Somaliland; 3 pieces of pottery, New Mexico: Lieut. G. T. Emmons, Princeton, N. J.
Bark knife; caribou horn used for
cutting outer bark of black pine,
hemlock and other trees, the inner
bark of which is used for food,
Babines, Huwilgit Village, Buckley
River Cañon; 4 slugs made by a
Chilkat hunter for use in brown bear
hunting with the old muzzle-loading
musket.

Morgan J. Goldsmith, New York City. 2 Specimens of Peruvian pottery.

Madison Grant, New York City. Human jaw, Bronx River, N. Y.

WILLIAM K. GREGORY, New York City. 8 Potsherds, section of the jaw of a ruminant and 4 fragments of bone, eight miles east of Flagstaff, Ariz.

MRS. L. F. G. GRIMKÉ, New York City. Wooden .needle, beaded pincushion (Salteaux), near Sault Ste. Marie, and 3 Tlingit baskets, Alaska.

GUGGENHEIM BROTHERS, New York City.
Collection containing armor of woven cords, drinking cup of basketwork, bow and quiver of arrows, pottery vessels, wooden scrapers used in mining, small pieces of textiles, etc., Chiuchiu, Chile, about 26 miles north of Chuquicamata.

A. Hatfield, Jr., New York City. Spears, bows, etc., Philippine Islands and German New Guinea.

GEORGE G. HEYE, New York City.

Pair of sandals, 2 awls, cornmeal sieve, gourd vessel, Jauco, Baracoa, Cuba.

JOHN J. HIPPLE, New York City.
Small stone paint bowl, found in gravel
dump at Whitehall and Stone streets,
New York City.

N. R. Hopkins, New York City.
Potsherds, prehistoric pueblo of Tschirege, New Mexico.

Mrs. Adrian Hoffman Joline, New York City.

Hawaiian tapa cloth.

George C. Longley, Pelham Manor, N. Y.

Stone, shell and pottery objects, Island of Jamaica.

MRS. E. M. McCarthy, Brooklyn, N. Y. Pair of mittens made from reindeer skin, Yukanski Bay, Russian Lapland.

George F. McConnell, Port Morris, N. J.

Stone moccasin last, Delaware Bay. F. E. McMillen, Boston, Mass.

Small voodoo drum and voodoo calabash rattle, confiscated in a raid on a voodoo temple in the Commune of Petit Goave, Haiti.

MISS LOUISE MIDDLETON, Brooklyn, N. Y. 2 Boxes of Indian pottery, Jemez, N. Mex.

Russell Hastings Millward, New York City. 10 Pieces of Maya embroidery, Flores,

Peten, Guatemala.

CLARENCE B. Moore, Philadelphia, Pa. Plaster cast of monolithic ceremonial hatchet, Moundsville, Ala.

MRS. PAUL MORTON, New York City. Navajo blanket, 8 North American Indian baskets, bronze statuette, Hopi runner for rain.

HENRY FAIRFIELD OSBORN, New York City.

5 Flint implements, Rawhide Butte, Eastern Wyoming; 1 bone hide dresser, probably from Wyoming.

Mrs. Elsie Clews Parsons, New York City.

2 Prayer plumes from a shrine on the west side of Towa Yallane; fragments of bone from a burial and pieces of cave floor, Fresh Creek, Andros Island, Bahamas.

W. S. Patterson, Maplewood, N. J. Eskimo parka, leggings and moccasins, Point Barrow, Alaska.

CLIFFORD H. POPE, Washington, Wilkes Co., Ga.

20 Arrowheads, I mile from Washington, Ga.

ROBERT R. REYNOLDS, Ceiba, Honduras. Tuna blanket, Mosquito Indians, Honduras.

Mrs. J. West Roosevelt, New York City. Mexican blanket.

THEODORE ROOSEVELT, Oyster Bay, L. I. 17 Prehistoric stone implements, Carib Indians,

M. F. SAVAGE, New York City.

Stone pestle or grinder, Friesland, Holland; anvil stone secured during excavation at Madison Avenue and 38th Street, New York City. MISSES LOUISE LEE and GEORGINA SCHUYLER, New York City.

Basket, platter, 2 small boxes containing pieces of pottery and lithograph of Osceola.

George R. Simpson, New York City. Malay kris and scabbard.

G. WHITFIELD SMITH, Grand Turk, B. W. I.

Indian skull from a cave in the Caicos Islands.

Leslie Smith, New York City.

2 Sioux pipes, 2 Sioux tobacco pouches, I Crow bow with arrows, 2 pairs of moccasins and I pipe cleaner.

EMANUEL SPIEGELBERG, Frankfort-am-Main, Germany.

Mexican silver filigree bridle, N. Mex.; Navajo leather belt with silver mountings, N. Mex.

EDWARD S. STEVENS, New York City. Amulet, Massie Township, Warren Co., Ohio, within a few miles of Fort Ancient.

MISS MARGARET STIMSON, New York City.

Apache basket.

Miss Grace E. Taft, New York City. Woven belt, Peru.

Mrs. Mary E. K. Turner, Smyrna, Del. Collection of Alaskan material loaned to the Museum in 1905 by her brother Dr. John B. Driggs, now deceased.

Mr. and Mrs. Joshua Velleman, New York City.

Pair of reindeer moccasins, bought at Laplander's camp, Tromsö, Norway.

CHARLES D. WAGNER, Santa Clara, Utah. Devil's horn weed used by Paiute of Shivwits, Utah, for black material for basketry.

CAPT. ELVIN HENRY WAGNER, United States Army.

Stone implement, interior of Panama, south of Gatun, inland some 15 miles from any water course.

WILLIAM R. WARE, New York City. 12 Arrows, Central America.

W. HOYT WEBER, New York City.
Foot cast made of clay found in limestone cave near "Big Spring" (nearest town Eminence), Mo.

George F. Will, Bismarck, N. Dak. Ears of Zuñi corn grown in Bismarck, N. Dak.; 14 samples of Indian corn.

## By Exchange

LIEUT. G. T. EMMONS, Princeton, N. J. 4 Tlingit baskets and I bag.

E. W. KEYSER, Washington, D. C. Hupa basket, Apache basket with cover, Mescalero basket, Ute water jar, 3 Paiute baskets and 1 mat, Alaska.

REGINALD G. RUSSOM, New York City.
Maori skirt, 2 boomerangs and Samoan club.

STATE MUSEUM, Albany, N. Y. Iroquois archæological collection.

## By Purchase

String of Jade and gold beads, Mitla, Mexico.

18 Carved jade tablets, 2 figurines, Tuxtepec, northern part of State of Oaxaca, Mexico.

6 Gold objects, Colombia.

375 Specimens of Eskimo material.

Tsimshian shaman's dance costume, 2 Kwakiutl clubs, Northwest Coast.

Shoshoni war bundle, Wyoming.

Gold breast ornament, Atrato River, Department of Antioquia, Colombia.

Ethnological specimens from New Guinea.

Archæological specimens, Las Matas, near Maracay, Venezuela.

Archæological specimens from southern Utah, northern New Mexico and Arizona.

103 Vessels, 4 shell bracelets, 1 skull and 1 string of beads of three colors, Mimbres Valley, New Mexico.

25 Pottery vessels, Mimbres Valley, New Mexico.

General ethnological collections from the Penobscot, Malecite, Micmac and Passamaquoddy Indians.

22 Gold ornaments, Colombia, 120 miles up Sinu River from Monteria.

- 3 War bonnets, 2 pairs of leggings, hair rope, buffalo calf skin robe, bridle, girl's dress, buffalo skin shield, beaded bandolier, knife and sheath, quirt, beaded tobacco bag, woman's dress, man's shirt, sheath, cradle, saddle and collection of pipes, Plains Indians.
- 17 Specimens of pottery, Sinu Valley, Colombia.
- Ethnological collection from the Matchapunga, Pamunkey and Algonkin Indians.
- Painted coat, 5 wampum belt models, brooch and pendant, bark pipe, comb, stone buzzer, bark box, bark drum, Penobscot.
- Image and shield, Philippine Islands. Girl's buckskin suit and pair of moccasins, Mescalero Apache. Fetish, Zuñi.

## THROUGH MUSEUM EXPEDITIONS

- Ethnological specimens from New Zealand and Fiji Islands. Collected by Miss Frances Del Mar.
- Archæological specimens from White River, Ariz. Collected by Pliny E. Goddard.
- Anthropological and ethnological material from the Northwest. Collected by H. K. Haeberlin,
- 25 Samaritan skulls, 15 Bedouin skulls, costume, etc., Syria. Collected by Henry M. Huxley, 1901.
- Archæological and ethnological material from Zuñi, N. Mex. Collected by A. L. Kroeber and Leslie Spier.
- Ethnological specimens from Hopi of Arizona and Crow Indians. Collected by Robert H. Lowie.
- Archæological specimens from the Aztec and other ruins in New Mexico.
  Collected by N. C. Nelson and Earl H. Morris.

- Ethnological specimens from Pawnee Indians, Oklahoma. Collected by James R. Murie.
- Ethnological and archæological specimens from Venezuela and archæological specimens from Porto Rico, in coöperation with the New York Academy of Sciences. Collected by Herbert J. Spinden.
- Archæological specimens from Kentucky. Collected by N. C. Nelson.

# DEPARTMENT OF PUBLIC HEALTH

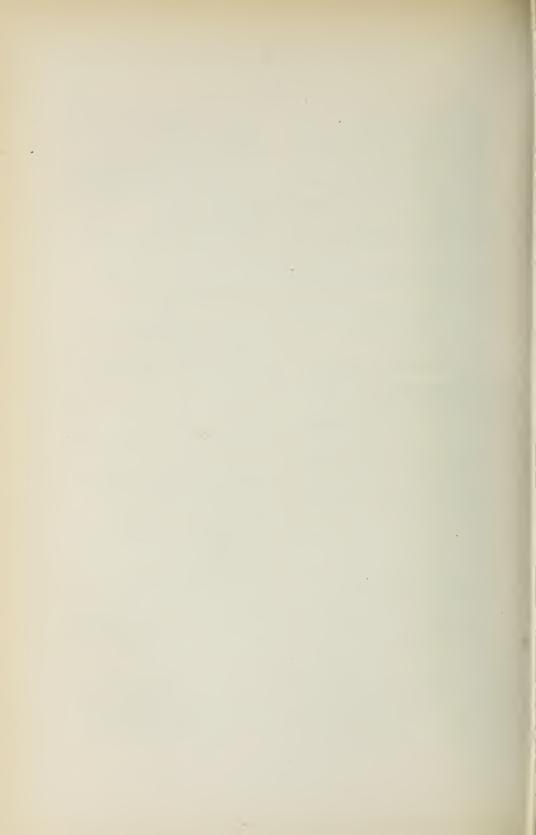
### By GIFT

- COLLEGE OF PHYSICIANS AND SURGEONS, New York City. Bacteriological specimen.
- Department of Invertebrate Zoölogy, Transfer.
  - I Fly and 3 bugs.
- EAST LOUISIANA HOSPITAL, Jackson, La. 3 Bacterial specimens.
- Johns Hopkins University, Baltimore, Md.
  - 21 Bacterial specimens.
- New Jersey Agricultural Experiment Station, New Brunswick, N. J. 31 Cultures of Actinomyces from soil.
- H. Noguchi, New York City.

  Jar of mounted diseased and healthy silk-worms and I slide cross section of silk-worms showing pebrinous corpuscles.

#### By Purchase

- 6 larvæ, 6 pupæ and 6 adults of *Libellula pulchella*.
- 6 Specimens of Anopheles manlipennis.



# **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 I. 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.

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.

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

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

<sup>†</sup> 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."

<sup>\*</sup> 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 lastnamed act, and by the Act of April 5, 1871, known as Chapter 200, 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

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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 Sundays, 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.

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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 parties, or their successors, anything herein contained to the contrary in anywise 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.

WILLIAM IRWIN, Secretary Department of Public Parks of the City of New York.

SEAL of the American Museum of Natural History

ROBERT L. STUART,

President American Museum of Natural History.

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 James F. Wenman, President of the Department of Public Parks of the City of New York, and William Irwin, Secretary of the said Department 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 Commissioners of the said Department of Public Parks, as such President and Secretary.

[SEAL.]

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

State of New York,
City and County of New York,

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 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 twenty-five 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 I. 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.

## ARTICLE V

SECTION I. 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 collections, 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

## T

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.

## TT

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.

## TTT

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 I. 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 countersigned 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, on recommendation 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 a Registrar, 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 I Subscriber's Ticket, 10 Complimentary Season Tickets and 10 Tickets for a single admission.

Associate Benefactors, giving \$10,000, are each entitled to I Subscriber's Ticket, 10 Complimentary Season Tickets and 10 Tickets for a single admission.

Patrons, giving \$1,000, are each entitled to I Subscriber's Ticket, 5 Complimentary Season Tickets and 10 Tickets for a single admission.

Fellows, giving \$500, are each entitled to I Subscriber's Ticket and IO Tickets for a single admission.

Life Members, giving \$100, are each entitled to I Subscriber's Ticket and 7 Tickets for a single admission.

Sustaining Members, paying \$25 yearly, are each entitled to I Subscriber's Ticket and 5 Tickets for a single admission.

Annual Members, paying \$10 yearly, are each entitled to I Subscriber's Ticket and 4 Tickets for a single admission.

Associate Members, paying \$3.00 yearly, are each entitled to I 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.

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.

family.

The Single Admission Tickets admit the bearers to the Members' Room, and are issued to Subscribers for distribution among friends and visitors.

# FOR THE CONSTRUCTION OF THE FOUNDATION FOR THE SOUTHEAST WING AND COURT BUILDING OF THE AMERICAN MUSEUM OF NATURAL HISTORY

## LEGAL ENACTMENTS OF 1911

By the Board of Aldermen

An Ordinance providing for an issue of corporate stock of The City of New York in the sum of two hundred thousand dollars, to provide means for additions to Museum of Natural History, under the jurisdiction of the Department of Parks, Manhattan and Richmond.

Be it Ordained by the Board of Aldermen of The City of New York as follows:

Section 1. The Board of Aldermen hereby approves of and concurs in the following resolution adopted by the Board of Estimate and Apportionment July 17, 1911, and authorizes the Comptroller to issue corporate stock of The City of New York to the amount and for the purposes therein specified:

"Resolved, That, pursuant to the provisions of section 47 of the Greater New York Charter, as amended, the Board of Estimate and Apportionment hereby approves of the issue of corporate stock of The City of New York to an amount not exceeding two hundred thousand dollars (\$200,000), to provide means for the construction of a foundation for the southeast wing and court building of the American Museum of Natural History, under the jurisdiction of the Department of Parks, Boroughs of Manhattan and Richmond, and that when authority therefor shall have been obtained from the Board of Aldermen, the Comptroller be and is hereby authorized to issue said corporate stock of The City of New York in the manner provided by section 169 of the Greater New York Charter, the proceeds thereof to the amount of the par value of the stock to be applied to the purposes aforesaid."

Adopted by the Board of Aldermen July 31, 1911, a majority of all the members elected voting in favor thereof.

Received from his Honor, the Mayor, Sept. 19, 1911, without his approval or disapproval thereof; therefore, as provided in section 40 of the Greater New York Charter, the same took effect as if he had approved it.

(Signed) P. J. Scully, Clerk.

# APPROPRIATIONS AND EXPENDITURES THEREON TO DECEMBER 31, 1915

RECEIPTS:				
By Direct Appropriation (C.D.P. 3b)	• • • • • •	• •	\$200,000	00
Expenditures:				
Phillips & Worthington (boring for foun-				
dation)	\$448	83		
Engineers' Services		26		
Benedetto & Egan Construction Co.	~ ,			
(excavating)	10.706	00		
(excavating)	49,790		00	
Architects' Fees (reserved)	37,857	14	88,191	23
Balance December 31, 1915			\$111,808	77

#### FOR EQUIPMENT AND CASE CONSTRUCTION

#### LEGAL ENACTMENTS OF 1915

#### By the Board of Estimate

Resolved, That subject to concurrence herewith by the Board of Aldermen, the resolution adopted by the Board of Estimate and Apportionment on July 17, 1911, amended on February 21, 1912, and concurred in by the Board of Aldermen on July 31, 1911, and on March 12, 1912, respectively, to read as follows:

"Resolved, That, pursuant to the provisions of section 47 of the Greater New York Charter, as amended, the Board of Estimate and Apportionment hereby approves of the issue of corporate stock of The City of New York to an amount not exceeding two hundred thousand dollars (\$200,000), to provide means for the construction of a foundation for the southeast wing and court building, and for architect's fees for designing, planning, and supervising the work of constructing the entire southeast wing and court building of the American Museum of Natural History, under the jurisdiction of the Department of Parks, Boroughs of Manhattan and Richmond, and that when authority therefor shall have been obtained from the Board of Aldermen, the Comptroller be and is hereby authorized to issue said corporate stock of The City of New York in the manner provided by section 169 of the Greater New York Charter, the proceeds thereof to the amount of the par value of the stock to be applied to the purposes aforesaid."

—be and the same is further amended by adding after the words "Natural History" the words "to the extent of eighty-eight thousand one hundred and ninety-one dollars and twenty-three cents (\$88,191.23), and for the purchase of cases, bookstacks and other equipment for said Museum, to the extent of one hundred and eleven thousand, eight hundred and eight dollars and seventy-seven cents (\$111,808.77); provided, however, that no encumbrances or expenditures shall be made against the proceeds of corporate stock herein authorized, nor shall bids upon such contracts be advertised for until after approval by the Board of Estimate and Apportionment of the plans, specifications, estimates of cost and forms of such contracts which shall 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 proceeds except after approval by said Board of such employment and of the fee or wage to be paid by preliminary and final contracts, 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; the amendment herein, having the effect of rescinding \$111,808.77 in the corporate stock authorization for the fund C. D. P. 3-B: which sum is herein reauthorized for another purpose.

A true copy of resolution adopted by the Board of Estimate and Apportionment, December 10, 1915.

JAMES MANCHESTER,
Assistant Secretary.

# FOR ADDITIONAL MAINTENANCE OF THE AMERICAN MUSEUM OF NATURAL HISTORY

#### LEGAL ENACTMENTS OF 1915

#### By the Legislature

#### . Chapter 312

An Act to amend chapter two hundred and ninety-two of the laws of nineteen hundred and five, entitled "An act to authorize a further appropriation for the maintenance of the American museum of natural history in the Central park of the city of New York," generally.

Became a law April 14, 1915, with the approval of the Governor.

Passed, three-fifths being present.

#### Accepted by the City.

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

Section 1. Section one of chapter two hundred and ninety-two of the laws of nineteen hundred and five, entitled "An act to authorize a further appropriation for the maintenance of the American museum of natural history in the Central park of the city of New York," is hereby amended to read as follows:

- § I. The board of estimate and apportionment of the city of New York may annually include in the budget for the then next ensuing financial year such sum or sums of money as it shall, in its discretion, deem necessary and proper to be applied by the department of parks of said city through the commissioner of parks for the boroughs of Manhattan and Richmond for the public educational work of the American museum of natural history, for the keeping, preservation and exhibition of the collections in the buildings in the Central park in said city that now are or hereafter may be occupied by said museum, and for the maintenance of the said buildings and equipment thereof, in addition to the sum or sums now authorized by law for such purposes.
  - § 2. This act shall take effect immediately.

STATE OF NEW YORK,
OFFICE OF THE SECRETARY OF STATE.

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.

Francis M. Hugo, Secretary of State.

# FOURTH ANNUAL REPORT OF THE

PENSION BOARD

OF

# THE AMERICAN MUSEUM OF NATURAL HISTORY

FOR THE YEAR 1916

#### OFFICERS AND MEMBERS OF PENSION BOARD

1916

Chairman FELIX M. WARBURG

Vice-Chairman RALPH W. TOWER

Treasurer HENRY P. DAVISON GEORGE N. PINDAR

Secretary

#### TRUSTEE MEMBERS

ADRIAN ISELIN, JR. WALTER B. JAMES

PERCY R. PYNE FELIX M. WARBURG

#### EMPLOYEE MEMBERS

HARRY F. BEERS

RALPH W. TOWER

GEORGE N. PINDAR

Bursar FREDERICK H. SMYTH

Counsel Lewis L. Delafield

Consulting Actuary

Medical Examiner S. HERBERT WOLFE GEORGE M. MACKENZIE, M.D. To the President and Trustees of the American Museum of Natural History and to the Subscribers to the Pension Fund:

I have the honor to transmit to you herewith the Fourth Annual Report of the activities of the Pension Board and on its financial operations for the fiscal year terminating December 31, 1916.

FELIX M. WARBURG
Chairman

February 1, 1917

It has been thought desirable to preface the report of the Pension Board by briefly recording the most essential changes which have been made in the Rules and Regulations of the Pension Fund and also the measures for safeguarding, in every way possible, its investments.

So many changes are occurring in the personnel of the employees of the Museum, as well as among the participants in the Pension Plan, that it has been found desirable and necessary to institute a system of physical examination for the new entrants. Upon recommendation of this Board, the Trustees of the Corporation amended the Rules and Regulations so as to provide that no employee of the Museum can become a subscriber without having first passed a satisfactory physical examination. That the insertion of this provision was justifiable and wise is best demonstrated, not alone by the rejection of certain applicants, but by having the attention of others personally called to minor physical defects and ailments, and which, in the majority of cases, have readily responded to treatment.

Early in the year the Chairman notified the members of the Pension Board that certain of its securities were not legal investments for Savings Banks, etc., according to the laws of the State of New York, and thereupon, in accordance with the resolution adopted by the Trustees of the Museum, the Pension Board sold such bonds and invested the proceeds thereof in securities which had been declared to be legal investments. A list of the securities now held is incorporated in the financial statement of this report.

It is with deep regret that we are obliged to report the death of four of our subscribers, who have been in the service of the Museum for periods ranging from seven to eighteen years, particular mention concerning whom will be found in another part of this report.

At the time of the adoption of the present Rules and Regulations, in 1913, the Trustees of the Corporation had the assistance of Mr. S. Herbert Wolfe as consulting actuary. Mr.

Wolfe since that time has taken an active interest in the welfare of the Plan and has submitted for consideration an interesting report of the condition of our Fund based upon his observations, from which we quote as follows:

"Your pension fund has been in existence nearly four years—having been started in March, 1913—and it will be interesting, therefore, to present a statistical review of this initial period.

The following statement of the receipts and disbursements of the fund by calendar years will enable you to judge of its growth:

TABLE I

RECEIPTS FROM ALL SOURCES

	191	3	191	4	191	5	1916	5	Total D	
Deductions of 3% from pay-rolls of										
City Maintenance Account	\$4,100		\$4,888			-			\$18,824	
General Account	1,980	21	2,448	о8	3,033	69	3,612	92	11,074	90
Special Funds Account	26	58	81	20	64	84	110	63	283	25
Corporate Stock Account:	98	06	367	47	4	56	121	16	591	25
Incidental Account	31	70	48	31	35	59		72	116	32
Crocker Land Expedition	25	94		07					26	OI
Personal contributions from subscribing										
employees	203	09	170			21	198	88	•	
Interest on deferred contributions			I	60					1	60
	\$6,465	72	\$8,005	66	\$8,290	61	\$8,942	06	\$31,704	05
Contributions of Board of Trustees to equal contributions of subscribing em-	. ,	·								ŭ
ployees	6,465	72	8,005	66	8,290	61	8,942	06	31,704	05
Interest on Credit Balances	115	09	201	00	187	92	180	77	684	78
Interest on Endowment Fund			50	74	50	74	67	43	168	91
Interest on Investment Fund			340	37	1,150	78	1,817	58	3,308	73
Interest on leave of absence payments.				17				-		17
Interest on repayment of contributions										·
and interest				87						87
Return of contributions			68	78					68	78
Interest on contributions returned				79						79
Interest on deferred contributions							3	08	3	о8
	\$13,046	53	\$16,674	04	\$17,970	66	\$19,952	98	\$67,644	21
Investment Fund				Ţ,			19,075	-	19,075	
Endowment Fund	1,083	27	27	50			1,140		2,251	
	\$14,129	80	\$16,701	54	\$17,970	66	\$40,169	37	\$88,971	37

#### PENSION FUND-SPECIAL FUNDS ACCOUNT

	RECEIPT	rs				
Cleveland H. Dodge		\$25	0 \$25	00		
Adrian Iselin, Jr		25 (	0 30	00		
Arthur Curtiss James		25 (	0 15	00		
A. D. Juilliard		25 0	0 15	00		
J. P. Morgan		25 0	U	00		
Henry Fairfield Osborn		25 0	· ·	00		
Charles Lanier		50 0	U	00		
Ogden Mills			·	00		
Interest on Credit Balances			_	60	77	
		\$200 0	0 \$180	60	\$ 77	\$381 37
D	ISBURSEM	IENTS				
1.	1913	1914	191	5	1916	Total Dec. 31, 1916
Return of contributions	\$189 94	\$607 3	9 \$575	36	\$963 77	
Interest on contributions returned	96	11 9		87	28 65	
	\$190 90	\$619 3	4 \$591	23	\$992 42	\$2,393 89
Service pension		\$231 2	5 \$277	50	\$277 50	\$786 25
Death gratuities paid under Section 13.		1,574 0	0 918	90	1,696 57	4,189 47
		\$1,805 2	5 \$1,196	40	\$1,974 07	\$4,975 72
Expenses			\$58	57	\$43 57	\$102 14
Total disbursements for Pension Fund . Purchase Securities:	\$190 90	\$2,424 5	9 \$1,846	20	\$3,010 06	\$7,471 75
Endowment Fund	\$1,083 27				\$1,140 40	\$2,223 67
Investment Fund	3,747 08	14,306 2	5 19,863	19	36,256 77	74,173 29
	\$4,830 35	\$14,306 2	\$19,863	19	\$37,397 17	\$76,396 96
Grand total	\$5,021 25	\$16,730 8	4 \$21,709	39	\$40,407 23	\$83,868 71
Cash on hand Dec. 31, 1916					***************************************	5,102 66
						\$88,971 37
Pension Fund-	-Special	Fund	Acco	UN	Т	. ,,,
Т	Disbursem	ENTS				
Special Contribution No. 1		\$150 0	0 \$50	00		\$200.55
Special Contribution No. 1		φ150 0	0 \$50 150			\$200 00 150 00
apolia. Communication 2						
Cook on hand Dog or rose		\$150 0	\$200	00		\$350 00
Cash on hand Dec. 31, 1916						31 37
						\$381 37

The above figures were furnished to me by the Bursar of the Pension Fund, who also made the following statement of the condition of the fund on December 31st, 1916:

Book value of securities held	\$56,688 95
Cash on hand	5,102 66
Cash in Special Funds Account	31 37
	\$6r 822 08

The number of contributing members to the fund varied but slightly from year to year, and on December 31st, 1916, the number contributing was practically the same as at the time that the fund started:

# TABLE II Number of Contributing Members

March 1, 1913	239
December 31, 1913	
December 31, 1914	223
December 31, 1915	235
December 31, 1916	

The accessions and departures were due to the following causes:

Contributing members at inauguration of fund	
New contributors since that time	97
	336
Resignations	00
Deaths 10	
Retired on pension I	
_	95
Contributing members Dec. 31, 1916	241

The 241 contributors arranged by attained ages on December 31st, 1916, are shown in the following table:

T	Α	R	T	Æ	Ι	T	T
	4 1	ш		ند،		1	1

Age	No.		No. Sub.		No. Sub.		No.
Age	Sub.	Age	Sub.	Age	Sub.	Age	Sub.
19	I	32	6	45	4	58	I
20			6	46	9	59	4
21	3	34	6	47	8		3
22	7		5	48	5	62	2
23	6		6	49	3	63	2
24	4	0.	8	50	3	64	3
25	8	38	8	51	7	65	2
26	6		7	52	2	66	3
27	5	40	6	53	4	67	4
28	4	4I	8	54	3	68	3
29	7	42	9	55	2	70	I
30	3		8	56	2	72	3
31	4	44	•••• 7	57	7	78	I

Total ..... 241

#### The ages of the 97 new contributors are as follows:

#### TABLE IV

Age at Admission	1913	1914	1915	1916
18		I		I
19			I	I
20		I		
		-		
2I		6	3	7
22	I	I	2	3
23		5	I	4
24		2	2	2
25			2	
26		3	3	
27		3		I
28	• • • • • • • • • • • • • • • • • • • •	2	I	2
29	• • • • • • • • • •	I		
30			2	
31	•••••	• • • • • • • • • • • • • • • • • • • •	I	3
32	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • •	2	
33	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	I	I
34	• • • • • • • • • • • • • • • • • • • •	I	2	I
35	• • • • • • • • • • • • • • • • • • • •		I	I
26		_		
36	• • • • • • • • • • • • • • • • • • • •	I		2
37	• • • • • • • • • • • • • • • • • • • •	I	-	I
38	•••••••			_
40	• • • • • • • • • • • • • • • • • • • •	I	I	I
4I		I		
•		I	I	
44				I
• •		I		•
45	• • • • • • • • • • • • • • • • • • • •	1	• • • • • • • • •	
46		I		
47			I	
48				

The corresponding table for the resignations is as follows:

#### TABLE V

Age at Resignation	1913 14	1915	1916
19	I I		
21			
22	I 3	I	
23	I		4
24	3	2	I
25	I		
5			
26	2	2	I
27	I		. т
28	I 2		. 2
29			. 2
30	I I		
30			
31	I	*********	. 2
32	I		
33	I		. т
34	2	I	
35		I	J
33	••••••		
36			2
37	I	•••••	
38	I I		
39	I		
40	I		
40	1	**********	
41	I		
43			
44	I		
1.2			
45	1 1	••••••	ľ
50			I
52	I	• • • • • • • • • • • • • • • • • • • •	
55	I		
56	I	•••••	
57	I		
59	I		
	1		
61	I	I	
62		I	
67		I	
-,			

The significance of the foregoing tables lies in the fact that the average age of the new entrants is 28, while the average age of those who have resigned is 32. In other words, the condition of the fund has been materially improved by a reduction of the average age of over one-third of the total membership. The fact that some of the retirements took place among those who had entered the fund since its inauguration may affect the correctness of this statement slightly, but to all intents and purposes the change has affected about one-third of the initial membership.

There have been ten deaths among the contributors, their ages and length of service at time of decease being as follows:

#### TABLE VI

#### DEATHS DURING 1914

Member	Age at Death	Length of Service
I	31	3 yrs.
I	40	13 " 12 "
I	51	12 "
I	58	15 "

#### DEATHS DURING 1915

Member	Age at Death	Length of Service
I	48	7 yrs.
I	56	11 "

#### Deaths during 1916

Member	Age at Death	Length of Service
I	40	12 yrs.
I	53	18 "
I	63	15 "
I	66	7 "

But one contributing member has been placed on the pension rolls, and it is a matter of interest to note that his retirement was not voluntary, but was made necessary by the condition of his health, which in the opinion of your Board indicated the advisability of his availing himself of the right to the pension after 15 years of service. This retirement took place in 1914, and the present age of the pensioner is 79.

The foregoing statistics are interesting and when examined from year to year will enable you to judge of the condition of your fund.

It may not be amiss for me at this time to point out certain facts in connection with your fund specifically and staff pension funds generally.

I venture to say that there is no form of benefits granted to municipal employees or private and public corporations about which so much uncertainty exists as among pension funds. The statement has been made that the number of such funds which are on a financially sound basis is practically negligible, and, while I am not prepared to subscribe to that statement in its entirety, I feel that it is correct to all intents and purposes. The New York City Teachers Retirement Fund and the Carnegie Pension Fund are recent examples of the instability of plans involving a large number of beneficiaries.

When I passed upon your plan early in 1913 I realized that there were peculiar conditions surrounding your employees which made it impossible to apply the data which had been used in the formation of a number of other funds. Many of your employees are connected with the scientific development of your institution, and the pride which they take in their work justifies us in assuming that there will be a deviation from the principles applicable to commercial annuity or pension plans; that this faith has been justified is indicated by a statement of the age and service record of your present contributors. The retirement of those more advanced in age and the taking of their places by employees of younger ages were other factors which led me to advise you that it would be unnecessary to

establish a large initial fund to take care of what are sometimes termed 'accrued liabilities.' I felt that we would be justified in first determining whether the peculiar conditions surrounding your employees would obviate the necessity for the creation of such initial fund based upon assumptions which would not be applicable to the problem which confronted us. I stated that if the time arrived when a change in your method became necessary, I would advise you and steps could then be taken to provide the necessary safeguards based upon data derived from your own actual experience. I am happy to state that the condition of your fund is such as to indicate the necessity for no change at the present time."

### Deceased Subscribers

It is with deep regret that we record the deaths of the following subscribers during the year 1916:

#### CHARLES FALKENBACH

Charles Falkenbach was born on July 28, 1876, in Philadelphia. Nearly thirteen years ago he became attached to the laboratory staff in the Department of Vertebrate Palæontology and soon became one of the most skilful preparators in the Museum. His accuracy in the detail of the restoration of fragile specimens and his inventiveness in devising means of preparing them for exhibition are especially deserving of credit and commendation. The numerous specimens of ancient fossil reptiles prepared by him during his long service with the institution will stand as monuments to his genius and aptitude. In his death the Museum has lost an industrious and conscientious employee, and his personal associates a valued friend and co-worker. He died on March 3, 1916.

#### CATHERINE HAWLEY

Catherine Hawley was born in Ireland on May 23, 1863. Over eighteen years ago she became a matron in the Museum. Possessed of a keen sense of humor, a most kindly disposition, and a willingness to assist those in distress, she early endeared herself to her associates and to the large body of employees in the Museum. The last years of her life were filled with physical pain and suffering, which she bore with a fortitude consistent with the Christian life which she lived. She died September 9, 1916.

#### LAWRENCE McKeon

Lawrence McKeon was born in Ireland, January 23, 1850. He entered the service of the Museum seven years ago and was assigned to the construction department, where he devoted his time principally to the operation of the wood-working machinery. Always of a happy disposition, his cordiality won for him a welcome in the gatherings of his associates, and his skilful workmanship merited the frequent approval of the heads of his department. He died on April 21, 1916.

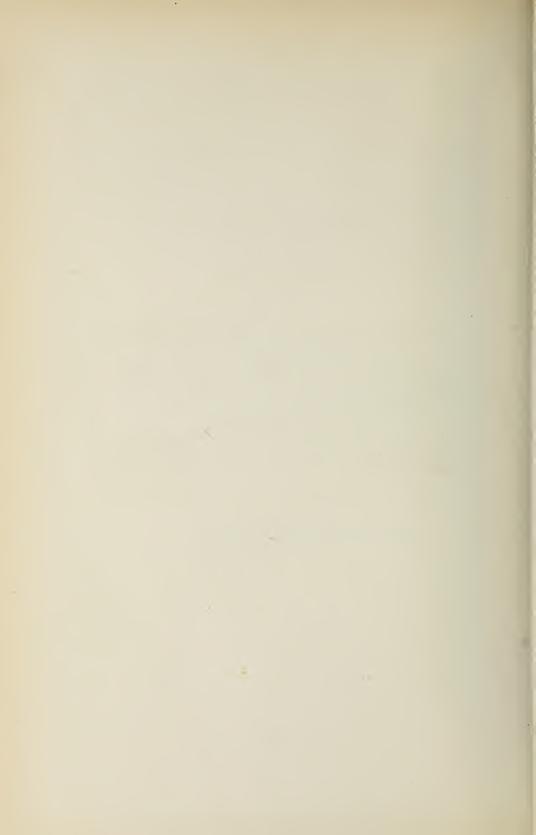
#### MICHAEL J. MILES

Michael J. Miles was born on July 12, 1853, in Newburgh, New York. He came to the Museum over fifteen years ago, where he was employed at his trade of carpentry. He was steadfast in friendship and faithfully and conscientiously performed the duties to which he was assigned. Although he suffered from physical ills for a protracted period, he bore them without complaint and without the knowledge of most of his associates, in whose memory will linger pleasant recollections of this agreeable man and fellow worker. He died on September 22, 1916.

#### RETIREMENTS

Name. Position. Date Effective. Period of Service.

Francis McGuire... Asst. Engineer.. March 1, 1914..15 yrs.



#### FINANCIAL STATEMENT

OF THE

PENSION FUND

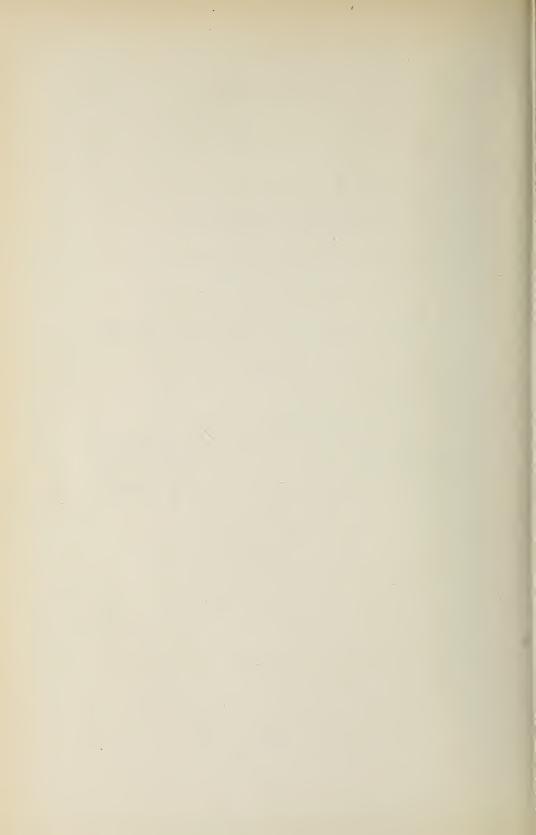
OF THE

#### AMERICAN MUSEUM OF NATURAL HISTORY

#### 1916

#### INVESTED FUNDS

	Par Value	Book Value
Endowment Fund		
Total	\$60,000 00	\$56,688 75



# STATEMENT OF INVESTED FUNDS

								•					
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	\$56,688 75
Date Acquired	Feb. 26, 1914	200 July 7, 1914	225 June 4, 1915	250 Dec. 29, 1915	225 May 5, 1916	May 29, 1916	200 May 29, 1916	225 May 29, 1916	200 May 29, 1916	225 July 17, 1916	200 Oct. 18, 1916	200 Dec. 30, 1916	
Ann. Int.	\$200	200	225	250	225	200	200	225	200	225	200	200	\$2,550
Interest Payable	4% MarSept.	4% May-Nov.	4½% June-Dec.	5% June-Dec.	2014 4½% AprOct.	4% AprOct.	4% AprOct.	2013 4½% AprOct.	4% JanJuly	4½% JanJuly	4% May-Nov.	4% MarSept.	
Rate of Int.	4%	4%	4	5%	41/2%	4%	4%	41/2%	4%		4%	4%	
Due	2008	1987	1965	1995	2014	1995	9661	2013	1955	2047	1955	1958	
Securities	Union Pacific Railroad Company, 1st Lien & Refunding Mortgage Bonds	Chicago & Northwestern Railway Company, General Mortgage Bonds	Pennsylvania Railroad Company, General Mortgage Bonds	Baltimore & Ohio Railroad Co., Refunding & General Mortgage Bonds	Chicago, Milwaukee, St. Paul Company, General & Refunding Mortgage Bonds	Atchison, Topeka & Santa Fe Railway Company, General Mortgage Bonds	Norfolk & Western Railway, First Consol. Mortgage Bonds	New York Central Railroad Co., Refunding & Improvement Bonds	Southern Pacific Railroad Co., First Refunding Mortgage Bonds	Northern Pacific Railway Co., Refunding & Improvement Mortgage Bonds	Illinois Central Railroad Co., Refunding Mortgage Bonds	Chicago, Burlington & Quincy R. R. Company, General Mortgage Bonds	
Par Value	\$5,000 00	2,000 00	2,000 00	2,000 00	2,000 00	2,000 00	2,000 00	2,000 00	2,000 00	2,000 00	5,000 00	2,000 00	\$60,000 00

#### PENSION FUND ACCOUNT

#### RECEIPTS

1916

Cash on Hand January 1, 1916	\$8,743 18	\$5,340 52
Personal Contributions of Subscribing Employees	198 88	8,942 06
CONTRIBUTIONS OF BOARD OF TRUSTEES:		0,942 00
To Equal Contributions of Subscribing Emplo		8,942 06
Interest on Deferred Contributions		3 08
Interest on Investment Fund		1,817 58
Interest on Endowment Fund		67 43
Interest on Credit Balances	• • • • • • • • • • • • • • • • • • • •	180 77
Investment Fund: Proceeds of Sale of Bonds	•••••	19,075 99
ENDOWMENT FUND: Proceeds of Sale of Bonds		1,140 40
Bursar's Account		500 00
	-	\$46,009 89
Examined Adrian Iselin, Jr. Auditing and Approved Percy R. Pyne Comm	nittee	•
PENSION FUND—SPECIAL FUND	DS ACCO	UNT
RECEIPTS		
1916		
Special Contributions No. 2:  Cash on hand January 1, 1916	• • • • • • • • • • • • • • • • • • • •	\$20 00
Interest on Credit Balances: Earnings to December 31, 1916		11 37
•	_	\$31 37
David American Tolking	=	<del>+0- 0/</del>
Examined Adrian Iselin, Jr. Auditing and Approved Percy R. Pyne Comm	nitte <b>e</b>	

#### PENSION FUND ACCOUNT

#### DISBURSEMENTS

#### 1916

RETURN OF CONTRIBUTIONS	<b>A</b>
Service Pension \$277 50	\$992 42
DEATH GRATUITIES PAID UNDER SECTION 13 1,696 57	
	1,974 07
Purchase of Securities:	
Investment Fund	
Endowment Fund	
	37,397 17
Expenses	43 57
LOAN ACCOUNT	500 00
Cash on hand December 31, 1916:	
Deposited with United States Trust Company of New York	
Deposited with Colonial Bank (Bursar's	
Account) 500 00	
	5,102 66
	\$46,009 89

#### H. P. DAVISON, Treasurer

E. & O. E.

NEW YORK, December 31, 1916

#### PENSION FUND-SPECIAL FUNDS ACCOUNT

#### DISBURSEMENTS

1916

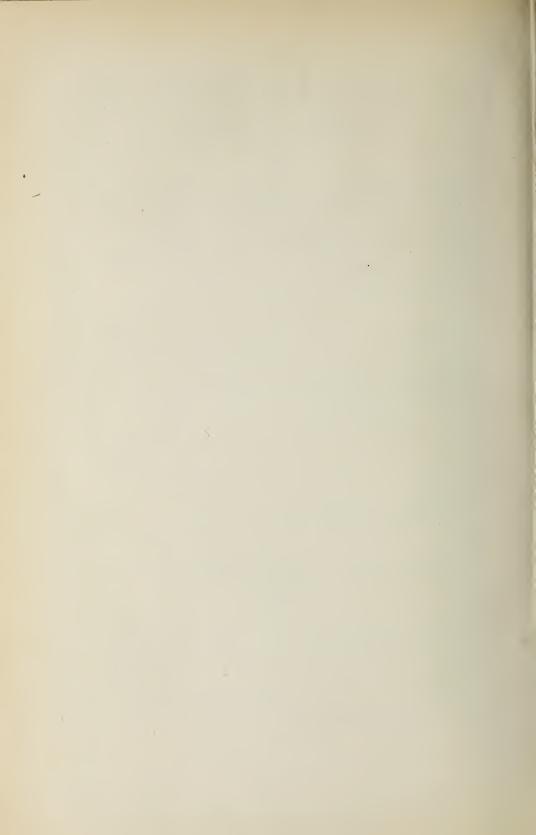
CASH ON HAND DECEMBER 31, 1916:

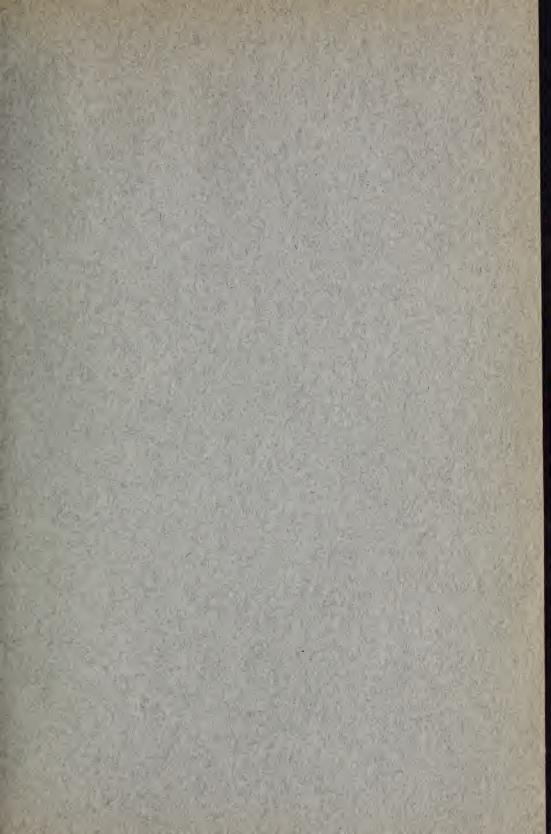
Deposited with United States Trust Co. of New York .. \$31 37

H. P. DAVISON, Treasurer

E. & O. E.

New York, December 31, 1916





## From the Charter of 1869

"For the purpose of establishing and mainstaining in said city a Auseum and Library of Natural Pistory; 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."

