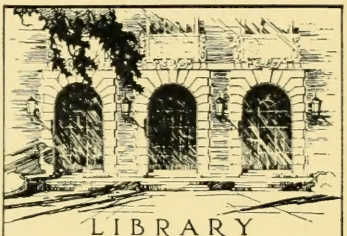

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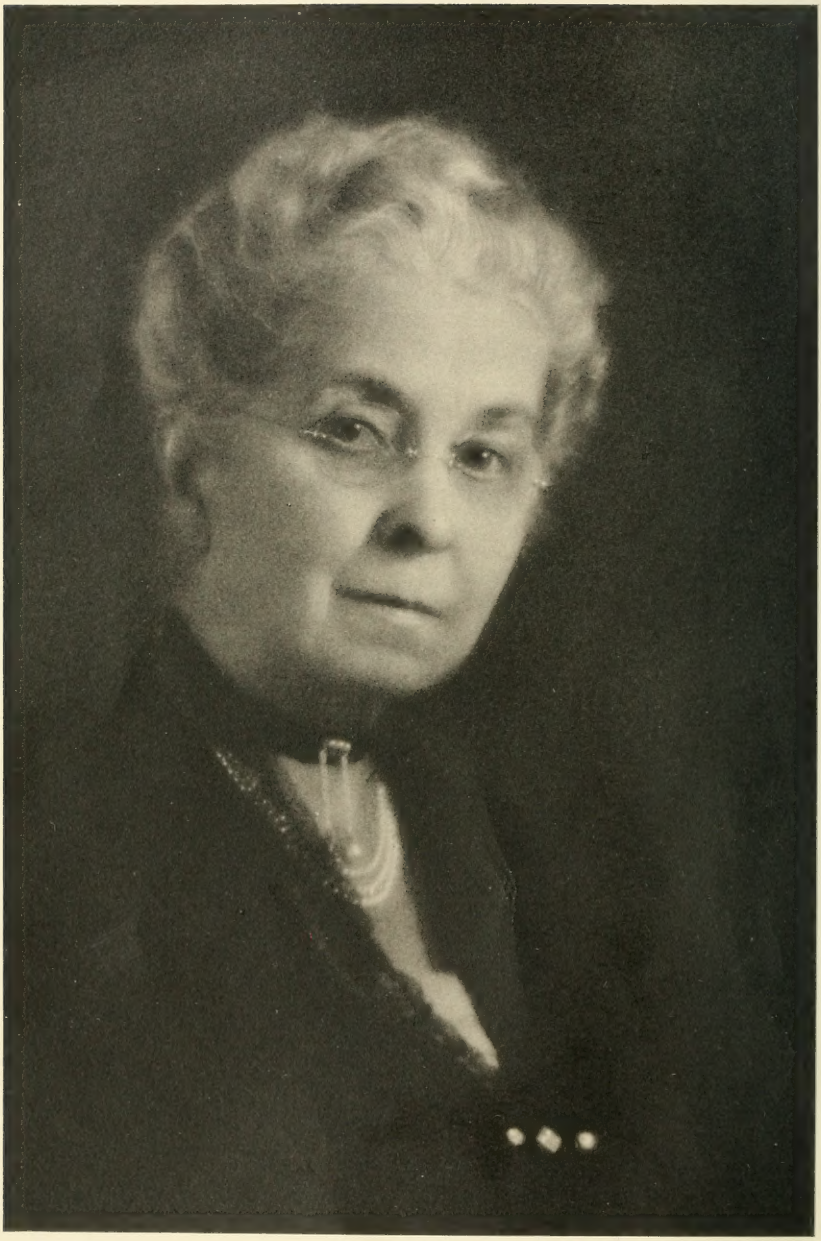

MRS. GEORGE T. SMITH

A Benefactor of the Museum, who died September 8, 1936. In honor of her, and her late husband, a hall has been named George T. and Frances Gaylord Smith Hall

REPORT SERIES

FIELD MUSEUM OF NATURAL HISTORY
FOUNDED BY MARSHALL FIELD, 1893

VOLUME XI NUMBER 1

ANNUAL REPORT OF THE DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1936

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CHICAGO, U.S.A.
JANUARY, 1937

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BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois,_____

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Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax purposes.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are guaranteed against fluctuation in amount and may reduce federal income taxes.

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ANNUAL REPORT OF THE DIRECTOR

1936

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1936.

More money is the great need of Field Museum.

This fact cannot be stressed too emphatically. It has been forcibly impressed upon those in charge of the administration of this institution throughout the year just closed, and in the several years preceding; it is the outstanding consideration that confronts the Museum officials as the year 1937 opens.

More money to operate the Museum—

More money to enable it to carry on the share of expeditions, research and dissemination of knowledge to which it is entitled as one of the world's pre-eminent scientific institutions—

More money to assure maintenance of its enviable position among the great museums of the world—

More money to provide for the retirement of old faithful workers in its employ—

The need of more money for these, and countless other activities, is incontrovertibly the present crying problem of Field Museum.

The decrease in income during the past few years has become, and continues to be, a serious menace to the further growth and development of this great institution.

This decrease has occurred in nearly all sources of income, viz.:

A decrease in the return from corporate investments.

A decrease in the return from taxes levied for the maintenance of museums.

A decrease in the revenue obtained from paid admissions.

A decrease in the sums paid in for memberships in the Museum.

A decrease in the contributions received from public-spirited citizens.

The decrease in the return from corporate investments makes one ponder long as to what the future has in store for endowed institutions.

If Field Museum is to carry on its activities at full strength, and on a scale suited to its standing as an institution and to the

importance of the great public and territory which it serves, it must have large additions to its endowment funds.

There must be also a substantial increase in the amount received from taxes.

There must be an ever increasing membership supporting the Museum with contributions or annual dues.

And the Museum must be able to look to the public-spirited citizens of Chicago and the middle west, which it so well serves, for generous contributions.

Lacking increased income from all such sources, the Museum is faced with the prospect of a future situation which might lead to serious curtailment of all the important functions which it fulfills.

The number of visitors during 1936 was 1,191,437, which represents a small increase over 1935 when attendance totaled 1,182,349. This is an encouraging indication of reviving public interest, as it is the first reversal of the downward trend shown each year since the 1933 record of 3,269,390 was attained, due to the stimulation given that year by A Century of Progress exposition.

Although there was a slight increase also in the number of paid admissions in 1936, and in the ratio of paid to total admissions, it was of practically negligible proportions. The number of visitors paying the 25-cent admission fee charged on "pay days" in 1936 was 68,375, or less than 6 per cent of the total, as compared to approximately 5 per cent in 1935. All other 1936 visitors, numbering 1,123,062, either came on the free days (Thursdays, Saturdays and Sundays), or belonged to classes to which free admission is extended every day—Members of the Museum, children, students, teachers, etc.

To obtain a true measure of the Museum's educational influence, it is necessary to consider that, in addition to the attendance received in the building, the institution reaches every year hundreds of thousands of others, principally children, through its extra-mural activities. The most important of these are conducted by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, and the Department of the N. W. Harris Public School Extension.

The Raymond Foundation sent lecturers to the schools, who addressed 444 gatherings in classrooms and assembly halls, with a total of 165,757 children. In addition to this work outside the Museum building, the Foundation presented in the James Simpson Theatre nineteen free motion picture programs, which were attended by 25,759 children; and conducted 810 groups comprising a total of

ERNEST ROBERT GRAHAM

A Trustee of the Museum from 1921 until his death on November 22, 1936, and one of the institution's Benefactors. A hall has been named Ernest R. Graham Hall as a memorial to him

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28,280 children on guide-lecture tours of the exhibition halls. For adults, 382 similar lecture tours were participated in by 7,115 persons. The nineteen free illustrated lectures for adults in the regular spring and autumn courses presented in the James Simpson Theatre attracted audiences totaling 17,557 persons. Altogether, 1,676 groups, aggregating 245,814 persons, were reached by the Raymond Foundation activities together with the adult lectures, tours for adults, and other similar special services offered the public by the Museum.

The traveling exhibits circulated among 446 schools and other institutions by the Harris Extension reached more than 700,000 persons, chiefly children. Contact was maintained daily throughout the school year in 379 Chicago public schools with a total enrollment of 463,539 pupils; and also in thirty-three parochial and eight private schools which, together with various community centers, clubs and other organizations, made the benefits of the service available to approximately 250,000 additional children. In each school two cases are kept on display, changes of subjects being made every two weeks through the delivery and collection service in which two Museum trucks are used.

The Museum Library functioned with its customary usefulness to the Staff of the Museum and to the general public, furnishing material needed in specialized research. Gifts, exchanges and purchases added many valuable new books and pamphlets to the collections, which now number approximately 105,000 volumes. Physical improvements were made in the rooms occupied by the Library.

The study collections maintained in each of the scientific Departments for reference work by scientists, teachers, and students were likewise used to advantage.

Other media through which the Museum disseminated scientific information to a public on which no statistics are possible but which obviously must aggregate hundreds of thousands of persons, are the publications and leaflets issued by the institution, the monthly bulletin *Field Museum News*, articles released to the daily and periodical press of Chicago and the nation, and radio programs concerning the Museum.

It is with deepest regret that there must be recorded here the deaths during 1936 of two Trustees of the Museum, Mr. Cyrus Hall McCormick and Mr. Ernest R. Graham.

In tribute to the memory of Mr. McCormick, his fellow Trustees adopted the following resolution at their meeting of July 20:

"With heartfelt grief the Trustees of Field Museum of Natural History make record of the death of their long-time and highly esteemed fellow member of the Board, Cyrus Hall McCormick.

"Since as far back as 1894, when the Museum's work was just beginning, Mr. McCormick had served as one of its Trustees, and had helped to guide the institution in its consistent progress over the years. His counsel was held in high regard by his companions on the Board, and he was a member of the important Building Committee. For his gifts to the Museum his name has been given a perpetual place on the roll of the institution's Contributors. He was also a Life Member and a Corporate Member of the Museum.

"Mr. McCormick was seventy-seven years old at the time of his death, which occurred on June 2, 1936. He was well known for his many philanthropies, and his deep interest and keen understanding of the problems of civic, educational and charitable institutions. His business career was characterized by remarkable vigor and the highest integrity, and he was noted for his successful development and administration of a vast industrial enterprise. He was one of the pioneers in the important field of activities for employes' welfare.

"Mr. McCormick was greatly admired by his fellow Trustees of the Museum, and his presence will be sorely missed at their future deliberations.

"Therefore, be it resolved that this expression of our sorrow at his passing be permanently preserved on the records of the Board;

"And be it further resolved that our deep sympathy be conveyed to the members of his family in their bereavement, and that a copy of this resolution be sent to his widow."

The following resolution in honor of Mr. Graham was adopted by the Trustees at a meeting held December 21:

"One of the truly great men of Chicago, and of the nation, has been lost by the death, on November 22, 1936, of Ernest Robert Graham. Internationally famed as architect and builder, he possessed the artist's touch that wove symphonies in stone and steel. Thus he left behind his own most fitting monuments in a host of America's most beautiful buildings, standing in Chicago, New York, Washington, and many other cities of this country. Abroad, too, his memory will be preserved in splendid structures of his design.

"Nowhere could grief over Mr. Graham's death be more poignantly felt than among his fellow Trustees of Field Museum of Natural History. He had been a member of this Board since 1921, and the services he rendered are incalculable. With this institution

he had a special and intimate relationship. The Museum was one of his predominant interests among the many worthy civic activities in which he engaged. In association with the late Daniel H. Burnham he designed the present Museum building, which ranks among the gems of his professional career. He was equally interested in the Museum as an institution. He was a Life Member, a Corporate Member, and, in recognition of the advancement of science, especially paleontology, made possible by his benefactions, he was elected an Honorary Member. His generous gifts to the Museum, totaling more than $130,000, placed his name on the list of the Museum's Benefactors, that group of twenty-one men and women who, with the Founder, have done the most for this institution in financial support. The development of the Hall of Historical Geology was made possible by his generous patronage, the magnificent series of twenty-eight mural paintings by Charles R. Knight restoring prehistoric life scenes, and the several group restorations, having been acquired with funds he provided. In recognition of his interest in and contributions to this hall, the Trustees in 1926 gave it the name Ernest R. Graham Hall, and this will remain as a permanent memorial to Mr. Graham, and a tribute on the part of the Museum for the many services he rendered it.

"As a Trustee, Mr. Graham devoted much time, and his best effort and thought, to the problem of developing and administering this institution. His keen insight and well-considered suggestions and advice were highly valued by his fellow Trustees, and he had a personal charm, as well as depth of intellect, which was always a source of inspiration to them.

"Therefore, be it resolved that this expression of our admiration and esteem for Mr. Graham, and our grief at his passing and the loss of his counsel and companionship, be permanently preserved on the records of the Board.

"And be it further resolved that our deep sympathy be conveyed to the members of his family in their bereavement, and that a copy of this resolution be sent to his widow."

Another death which removed one of the Museum's most earnest friends was that of Mrs. George T. (Frances Ann Gaylord) Smith, who passed away on September 8. Mrs. Smith had been for years a generous supporter of the institution, and in recognition of her contributions of funds and valuable material for the exhibits, had been elected a Patron, a Contributor, and a Corporate Member. In her honor, and in memory of her late husband, George T. Smith,

who died some years previously, the Board of Trustees in 1931 gave to Hall 24 (devoted to the archaeology of China) the name George T. and Frances Gaylord Smith Hall. Mrs. Smith was especially interested in the Chinese collections, being herself the possessor of an excellent private collection of Orientalia. In the settlement of her estate, Field Museum received a most notable collection of several hundred items of rare and beautiful Chinese objects of jade, porcelain, ivory, tapestry, embroidered silks, and other materials. The jades, when added to the large number already on exhibition in Hall 30, will, it is believed, make Field Museum's collection one of the finest in the world. At a meeting of the Trustees of the Museum held on September 21, the names of Mr. and Mrs. Smith were posthumously added to the roll of the Museum's Benefactors.

Also added to the list of Benefactors was Trustee Frederick H. Rawson, who gave additional funds during the year which brought his total contributions to more than $100,000.

In recognition of her eminent services, notably in sponsoring the Straus West African Expedition (1934), Mrs. Oscar Straus, of New York, was elected a Patron.

Dr. Karl Keissler, Director of the Botanical Division of the Natural History Museum of Vienna, was elected a Corresponding Member in appreciation of services in connection with Field Museum's botanical work in Europe.

Two new Life Members were elected during 1936: Mr. Oscar Heineman, and Miss Gracia M. F. Barnhart.

A list of Members in all classes will be found in this Report, beginning on page 119. The total membership at December 31 was 4,238, a gain of 95 over the same date in 1935. This is the first increase since 1930, and encourages the hope for further membership growth in the next few years.

With regret, note is made of the death of Sir Henry Wellcome in London on July 25. Sir Henry, who was born in Wisconsin and spent his youth in this country, had achieved world-wide fame as a benefactor of medical and biological sciences, and archaeology. He gave valuable assistance to the Marshall Field Anthropological Expedition to the Near East (1934).

The Board of Trustees, at its Annual Meeting held January 20, re-elected all Officers of the Museum who had served in 1935.

At the regular meeting held December 21, the Board elected three new Trustees, Mr. Charles A. McCulloch, Mr. Leopold E. Block, and Mr. Albert B. Dick, Jr., to fill vacancies on the Board

A CHELLEAN SCENE

Group 1, Hall of the Stone Age of the Old World (Hall C)

Restoration of earliest type of man of whom remains have been found in Europe. The time represented is approximately 250,000 years ago, and the scene reproduces a site in northern France

Modeling by Frederick Blaschke

Background by Charles A. Corwin

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which had been caused by the resignation of Mr. Frederick H. Rawson, and the deaths of Mr. Cyrus H. McCormick and Mr. Ernest R. Graham. They were elected Corporate Members also.

Installations of new exhibits, and reinstallations and improvements of older ones, proceeded as usual. The outstanding new exhibits are a habitat group of emperor penguins in Hall 20, and another of white-tailed gnu in Carl E. Akeley Memorial Hall (Hall 22).

The emperor penguins are especially interesting. They are the largest species of their family, they live farther south than any other birds, and are extremely odd in appearance. In the group are eight specimens, collected by Rear Admiral Richard E. Byrd on his Second Antarctic Expedition (1935), and presented to the Museum by the Chicago Zoological Society. They are shown in a scene representing their home in "Little America." The birds were mounted by Staff Taxidermist John W. Moyer, assisted by Mr. John LaBonte. A method unusual in bird taxidermy was employed —manikins similar to those used for large mammals were modeled from the skeletons in accordance with measurements from fresh specimens, and the skins were mounted over these. Staff Taxidermist Leon L. Walters cast and reproduced the bills and feet in cellulose-acetate, which gives most realistically the appearance and texture of life. Staff Artist Charles A. Corwin and Staff Taxidermist Arthur G. Rueckert painted the panoramic background representing the great Ross ice shelf.

The white-tailed gnu group is composed of two old bulls, an old cow, a younger cow, and a calf, collected in South Africa by an expedition led by Mr. Arthur S. Vernay, of New York and London, who presented them to the Museum. As it is extremely difficult to secure specimens of this animal, which is practically extinct in the wild state, the Museum was very fortunate to obtain this excellent representation. They are grotesque-looking animals, and in early books were called "horned horses." The group was prepared by Staff Taxidermist C. J. Albrecht.

Among other additions to the zoological exhibits are a series of six different species of penguins, placed in the systematic collection in Hall 21; a specimen of the rare bird known as Derby's guan, or faisan, obtained by the Leon Mandel Guatemala Expedition (1933–34), also added to Hall 21; and single mounts of the rare four-horned antelope of India, the Ethiopian ibex, the small tamarao buffalo of Mindoro in the Philippines, and the Asiatic wild ox called

banting, all four of these being placed in the horned and hoofed mammal series in George M. Pullman Hall (Hall 13). The four-horned antelope was obtained by the late Colonel J. C. Faunthorpe, of Bombay; the Ethiopian ibex was secured by the Field Museum–*Chicago Daily News* Ethiopian Expedition (1926–27); the tamarao is a gift from Mr. A. W. Exline, of Mindoro; the banting was obtained through the William V. Kelley–Roosevelts Expedition to Eastern Asia (1928). Important additions and reinstallations were made among the exhibits of reptiles and amphibians in Albert W. Harris Hall (Hall 18), and eight cases of marine invertebrates were installed in the same hall. The appearance of the habitat group of Bengal tigers in William V. Kelley Hall (Hall 17) was greatly improved by remounting of the male animal, and other minor changes. The hippopotamus and white rhinoceros, formerly included in the systematic collection of mammals in Hall 15, were transferred to Carl E. Akeley Memorial Hall (Hall 22), where they have been installed, with shrubbery and reeds to suggest their characteristic habitat.

Among important new exhibits in the Department of Geology is a model installed in Clarence Buckingham Hall (Hall 35), illustrating the structure of the internal layers of the earth, in accordance with accepted scientific theories. In the same hall there has been installed a model showing the various shapes assumed by bodies of igneous rock in their original positions before they are exposed by erosion of the rocks above. Also added to this hall are a diorama representing an Alpine glacier, and an exhibit which illustrates the phenomenon of mineral fluorescence. Work was begun on complete reinstallation of the large meteorite collection in Hall 34. A replica of the great Jonker diamond, one of the world's largest, weighing 726 carats (more than one-quarter of a pound) was placed among the gems and jewels in H. N. Higinbotham Hall (Hall 31). It is a gift from Mr. Harry Winston, of New York, owner of the original diamond.

There were many additions to the paleontological exhibits in Ernest R. Graham Hall (Hall 38). Outstanding among these are a group of four articulated skeletons of animals shown as they were caught in their death trap, the Rancho La Brea asphaltum pools in Los Angeles; a fossil skeleton of the South American glyptodont *Eleutherocercus*, together with a miniature restoration prepared by Assistant Phil C. Orr, showing the animal as it appeared in life; and the only known skeleton of the strange South American mammal

designated as *Homalodotherium*. The *Homalodotherium* skeleton was prepared by Assistant J. H. Quinn. Both *Eleutherocercus* and *Homalodotherium* are from the collections made some years ago by the Marshall Field Paleontological Expeditions to various parts of South America, under the leadership of Curator Elmer S. Riggs.

It should be mentioned here that further research conducted during 1936 on a specimen placed on exhibition in 1935, and identified in the Annual Report for 1935 (pages 298 and 340) as *Titanoides*, resulted in its classification as the type of a new genus, *Barylambda*, a similar animal of equal rarity.

In the Department of Botany, six more large murals by Staff Artist Charles A. Corwin were placed on the walls of the Hall of Plant Life (Hall 29), which, with those reported in 1935, make eight completed out of the total of fifteen planned. Subjects of the new ones are: the dragon's blood tree of Teneriffe, Canary Islands; giant tree cacti of Mexico; the Chilean pine; the baobab tree of Africa; the traveler's tree of Madagascar; cucumber trees of the island of Socotra; and the American elm. Also added to the exhibits in Hall 29 are reproductions of purple angelica, and a flowering and fruiting branch of a cassia known as "golden shower," prepared by Assistants Emil Sella and Milton Copulos.

An outstanding new exhibit in Hall 25, half of which is devoted to food plants, is a diorama depicting in miniature a tea plantation in the rocky highlands of Ceylon. This was prepared by Assistant John R. Millar, and has a painted background by Mr. Corwin.

In the Department of Anthropology an exhibit was placed in Hall 7 of the pottery and the bone and stone implements collected from the Lowry Ruin in southwestern Colorado by expeditions conducted during several summers by Chief Curator Paul S. Martin. A very interesting specimen of an ancient Egyptian promissory note was put on display in Hall J. Most of the other installation work in this Department in 1936 consisted either of reinstallations of old collections, or work upon new exhibits for future exhibition.

As in several years past, the necessity for economy permitted no budget appropriations for major expeditions. A small amount of field work was conducted, however, and the Museum again benefited to some extent from expeditions conducted under auspices other than its own. Mr. Emil Sella, of the staff of the Department of Botany, collected material in the mountains of Wyoming for the preparation of a projected group of alpine plants for the Hall of Plant Life. Curator Sharat K. Roy collected in Dutchess County,

New York, several series of rocks illustrating the phenomena connected with progressive metamorphism, for a proposed exhibit in the Department of Geology. An interesting collection of birds, mainly from northeastern Greenland, was obtained through cooperation with the Chicago Zoological Society, and the expenditure of income from the Emily Crane Chadbourne Fund. These birds were collected by Mr. Harold C. Hanson, a volunteer worker in the Department of Zoology, who accompanied, in the interest of Field Museum, the expedition led by Captain Robert A. Bartlett to capture live musk-oxen for the Chicago Zoological Society. On a hunting trip in South America, Mr. Sasha Siemel, of New York, obtained a baby tapir which he presented to the Museum for use in completion of the habitat group of that animal on exhibition in Hall 16. Arrangements were made whereby the Museum hopes to obtain rare birds of Australia and New Zealand needed for habitat groups in Hall 20. Mrs. Oscar Straus, of New York, a Patron of the Museum, and sponsor of the Straus West African Expedition of Field Museum in 1934, acted on behalf of the Museum in this connection during the course of a visit she made to those countries.

Mr. J. Francis Macbride, Associate Curator of the Herbarium, continued through 1936 the project upon which he has been working in Europe since 1929. This work has resulted in the acquisition to date of more than 30,000 photographic negatives of type specimens of tropical American plants in European herbaria. During 1936 Mr. Macbride was engaged in this task at Madrid, Geneva, and Vienna. Prints from the negatives obtained have been added to the Herbarium of Field Museum, and duplicate prints are made available to botanists and institutions everywhere, at cost. These are highly regarded for their usefulness in the work of systematic botany.

Grateful acknowledgment is herewith made to various contributors of money, and of material for the scientific collections. Among gifts of funds may be mentioned the following:

A gift from Mr. Albert W. Harris consisting of 200 shares of stock of the Harris Trust and Savings Bank, valued at $85,000. This was added to the endowment fund of the N. W. Harris Public School Extension of the Museum.

Mr. Marshall Field contributed $74,625.93, to meet certain operating expenses of the Museum, and to cover a budget deficit.

Contributions received during the year from President Stanley Field totaled $59,882. Of this sum, $38,621.37 was applied, in

accordance with his directions, to the reduction of the building deficit, and a corresponding reduction in bank loan (see financial report, page 97); and the balance was set aside for the purchase of much needed exhibition cases, storage equipment, laboratory equipment, and for certain expeditions to be conducted in the year 1937.

A contribution of $7,500, received from Mr. Frederick H. Rawson, was added to the Museum endowment.

A gift of $6,000 was made by Mrs. James Nelson Raymond, in continuation of the many contributions she has made toward the operating expenses of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, which she established in 1925 with a munificent endowment.

Gifts from Mr. Leslie Wheeler, for the purchase of specimens of birds of prey, totaled $1,090.

From Mr. Henry J. Patten, a gift of $250 was received.

Mr. C. Suydam Cutting, of New York, contributed $200.

From the estate of the late Mr. William V. Kelley the Museum received a bequest of $50,000. This is being maintained as a separate fund, to be known as the William V. Kelley Fund, and the income is to be used for such purposes as the President and the Board of Trustees may direct.

The will of the late Mr. Cyrus H. McCormick provided a bequest of $10,000 for the Museum.

The sum of $10,000, and one-fourth of the residuary estate of the late Mrs. Edith Almy Adams were bequeathed to the Museum.

The sum of $5,175, representing his bequest of $5,000 and interest thereon, was received from the estate of the late Judge John Barton Payne, a former Trustee of the Museum.

The administrator of the estate of the late Mrs. Helen M. Block paid to the Museum $2,000, representing her bequest.

The Rosenwald Family Association purchased from the Museum for $50,000, under a repurchase agreement, a block of Sears Roebuck and Company stock which the institution had acquired through a gift from the late Mrs. Augusta N. Rosenwald.

The Museum received from the Chicago Park District $91,029.94, representing the institution's share, as authorized by the state legislature, of collections made during 1936 under the tax levies for 1935 and preceding years.

Many gifts of material for the collections were received. More detailed reference to these will be found in the departmental sections of this Report, and in the complete List of Accessions (page 98). Most valuable of such accessions was the collection of several hundred Chinese art objects, bequeathed by the late Mrs. George T. Smith, to which reference has already been made. Among other outstanding acquisitions a few may be mentioned, as follows:

His Highness the Maharaja Gaekwar Sir Savaji Rao III, ruling monarch of the Indian state of Baroda, who was a visitor at the Museum in 1933, presented excellent examples of four of the arts of India—embossed metal work, delicate lacquer work, teakwood carving, and textile making.

Mr. William H. Dunham, of Evanston, Illinois, presented his private herbarium consisting of 2,000 mounted sheets of plants. This collection has been found extremely valuable in the Department of Botany.

The Ringling Brothers and Barnum and Bailey Circus presented a specimen of black-tailed wallaby, a species which had been lacking from the Museum's Australian mammal collections.

Mr. Leslie Wheeler, of Lake Forest, Illinois, continued to make frequent contributions to the collection of birds of prey.

The Chicago Zoological Society, John G. Shedd Aquarium, General Biological Supply House of Chicago, and Lincoln Park Zoo (maintained by the Chicago Park District), as in previous years, made large and valuable additions to the Museum's zoological collections.

President Stanley Field presented to the Museum Library a rare and valuable work—the two volumes of the first edition of Dr. Samuel Johnson's *Dictionary of the English Language*, published in 1755.

Commander Eugene F. McDonald, Jr., of Chicago, presented a rare painted conch-shell trumpet, which is an interesting example of ancient culture in the State of Nayarit, western Mexico.

Unusually valuable collections of plants for the Museum Herbarium were received from the National Museum of Prague, Czechoslovakia; the Botanic Garden of Madrid, Spain, and the Department of Botany of the University of Chicago.

A copy of *Trail Mates*, an exceptionally fine four-reel motion picture presenting natural history in story form, was given to the Museum by its producer, Captain Jack Robertson, of Oakland,

California. It is extremely useful for the children's programs presented by the James Nelson and Anna Louise Raymond Foundation.

From the Federal Art Project of the Works Progress Administration there were received twenty-four, enlarged, plaster reproductions of Near East stamp seals and cylinder seals, which will be used in a new hall of archaeology now in preparation.

The Museum accepted an offer made by Dr. Wilfred H. Osgood, Chief Curator of the Department of Zoology, to conduct and personally finance an expedition in southern French Indo-China, Siam, and possibly the Malay Peninsula. Plans call for Dr. Osgood's departure in January, 1937, and his return in May.

Among distinguished visitors entertained at Field Museum in 1936 were Mrs. Franklin Delano Roosevelt, wife of the President of the United States, who came to observe the accomplishments of the Works Progress Administration project being conducted at this institution; M. Jean Delacour, the noted French ornithologist; Mr. E. G. Boulenger, Director of the London Aquarium; and a group of members of the National Academy of Sciences.

The Museum presented to Tulane University, New Orleans, Louisiana, a collection of 294 casts of Mayan sculptures. This material was part of an exhibit at the World's Columbian Exposition in 1893, and had been turned over to the Museum at the close of the exposition. A number of pieces had been selected for Museum exhibition, and the remainder had been in storage since acquisition.

Two new automobile trucks were purchased in 1936 to replace those formerly in use for deliveries and collections of the traveling exhibits circulated among Chicago schools by the Department of the N. W. Harris Public School Extension of Field Museum.

In recognition of increasing costs of living, salaries of Museum employes were readjusted, effective January 1. As noted in the Report for 1932, certain salaries in that year had been adjusted downward, and then a horizontal reduction of 10 per cent was made in all salaries above $100 per month. Salaries are now restored to the level existing before the 10 per cent cut. This restoration was made possible through the generosity of Mr. Marshall Field, and at his request.

There were a number of Staff changes during the year, and toward the end of the year the Board of Trustees approved a reassignment of titles in the scientific Departments. Under the new plan, the heads of Departments, formerly designated as Curators, have become Chief Curators; and most of the men in charge of

divisions within the Departments, formerly designated as Assistant Curators and Associate Curators, have been made Curators of their respective divisions. This eliminates much confusion which formerly existed in the minds of outsiders, and improves the internal organization of the Museum.

Dr. Paul S. Martin on January 1 assumed the post of Curator (later changed to Chief Curator) of the Department of Anthropology, in accordance with the appointment approved by the Board of Trustees on December 16, 1935 (Annual Report for 1935, page 304).

Mr. C. Martin Wilbur was appointed Curator of Sinology, and assumed his duties on October 1. Work on Oriental collections and researches, developed so notably by the late Dr. Berthold Laufer, has been placed in Mr. Wilbur's hands.

Dr. Earl E. Sherff, well-known botanist, and member of the faculty of the Chicago Normal College, was appointed Research Associate in Systematic Botany on the Museum Staff, an honorary position in recognition of valuable services he has rendered to this institution for many years.

Two new guide-lecturers were appointed to the staff of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures. They are Miss Velma Whipple and Miss Marie B. Pabst. The Raymond Foundation staff, reduced to three for several years, is now back to its full strength of five lecturers, this action having been made necessary by the increasing public demands for service.

In the reassignment of titles, previously mentioned, Mr. J. Francis Macbride, formerly Assistant Curator of the Herbarium, became Associate Curator of the Herbarium; Messrs. D. Dwight Davis, Emil Liljeblad, and Emmet R. Blake, formerly Assistants in the Divisions of Vertebrate Skeletons, Insects, and Birds respectively, became Assistant Curators of those Divisions; Mr. Bryan Patterson, formerly Assistant Curator of Fossil Mammals, became Assistant Curator of Paleontology.

Because of her recent marriage, Miss Bertha Schweitzer, clerk in the Department of Botany, resigned.

Under the provisions of the Field Museum Employes' Pension Fund, insurance was paid in the following amounts to the beneficiaries of the following employes and pensioners who died during 1936 or late in 1935: $4,000 to the sister of Miss Tessie Hannan, bindery worker in the Division of Printing; $4,000 to the estate of Mr. Jacob F. Mangelsen, carpenter and preparator in the Depart-

MODEL OF PYRAMID OF QUETZALCOATL

Hall 8

Acquired in an exchange with the National Museum of Mexico

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

ment of Botany; $6,000 to the widow of Mr. William J. O'Brien, skin dresser in the taxidermy shop; and $4,000 to Field Museum as beneficiary of the policy on Mr. Peter Glynn, former carpenter, to whom the Museum had paid a pension for a number of years totaling an amount far in excess of the insurance proceeds.

Mr. Mathias Dones was employed as a carpenter and preparator in the Department of Botany, to replace Mr. Jacob F. Mangelsen, deceased.

Professor F. E. Wood continued his activity, begun in 1935, as a volunteer worker, in organizing the collection of Tibetan manuscripts bequeathed to the Library of the Museum by the late Dr. Berthold Laufer.

The degree of doctor of science was conferred in November by Oxford University upon Mr. Wilfrid D. Hambly, Curator of African Ethnology, in recognition of a vast amount of research, including work on the Frederick H. Rawson–Field Museum Ethnological Expedition to West Africa (1929–30), and various books he has written which have been published by Field Museum Press.

Various research projects were under way in the scientific Departments, of which it is possible to mention here only a few. A notable one was the study undertaken by Mr. Paul C. Standley, Curator of the Herbarium, of the Sessé and Mociño plants collected in Mexico nearly 150 years ago under the patronage of King Charles III of Spain. This collection, numbering 7,000 plants, was sent to the Museum for this purpose by the Botanic Garden of Madrid.

Dr. Edwin H. Colbert, Assistant Curator of Vertebrate Paleontology at the American Museum of Natural History, New York, was aided in research on an extinct member of the giraffe family known as *Sivatherium* by a representation of that animal in copper from the archaeological collections made at Kish by the Field Museum–Oxford University Joint Expedition to Mesopotamia. A horn, collected by the same expedition, assisted Dr. Wolfgang Amschler, of the College of Agriculture in Vienna, in establishing the presence 5,000 years ago in Mesopotamia of a species of modern goat which had been presumed to be unknown until recent times.

Assistant Curator Bryan Patterson was engaged in an important study of brain casts of fossil mammals of the order Notoungulata.

Mr. Henry W. Nichols, Chief Curator of the Department of Geology, undertook an investigation of methods to restore patina of

a non-malignant kind to ancient bronzes from which malignant patina had been removed to save them from destruction.

Associate Curator Charles E. Hellmayr, working in Vienna, continued his researches of past years on the birds of the western hemisphere. Curator Colin C. Sanborn made progress with his extensive researches in connection with bats. Curator Karl P. Schmidt was engaged in researches on reptiles and amphibians of southwestern Asia, Central America, and the Chicago region. Assistant Curator D. Dwight Davis made observations resulting in some new conclusions regarding the mating behavior of snakes.

Members of the Museum Staff attended a number of important scientific meetings. From the Department of Anthropology, Chief Curator Paul S. Martin, Curator Wilfrid D. Hambly, and Curator Richard A. Martin attended the meetings of the Central Section of the American Anthropological Society, held in Chicago in April. Chief Curator Martin also attended the main meetings of the same society, held at Washington, D.C., in December. Other meetings attended by Curator Richard A. Martin were those of the Middle West Branch of the American Oriental Society, and the Archaeological Institute of America, both held in Chicago, the first in March, and the second in December. Curator Henry Field, at the request of the United States Department of State, attended the International Congress of Prehistoric and Protohistoric Sciences at Oslo, Norway, in August, as a member of the American delegation.

Curator Elmer S. Riggs and Assistant Curator Bryan Patterson, of the Division of Paleontology, were present at the annual meeting of the National Academy of Sciences held at the University of Chicago in the spring, and Mr. Patterson attended also the annual meeting of the Paleontological Society of America, held in December at Washington, D.C.

The Department of Zoology was represented at the annual meeting of the American Ornithologists' Union, held at Pittsburgh in November, by Chief Curator Wilfred H. Osgood, Curator Rudyerd Boulton, and Assistant Curator Emmet R. Blake. Curator Karl P. Schmidt and Assistant Curator D. Dwight Davis attended the annual meeting of the American Society of Ichthyologists and Herpetologists at the University of Michigan, Ann Arbor, August 31 and September 1. Mr. Schmidt acted as temporary chairman, and was elected vice-president for the ensuing year.

The productivity of Field Museum Press exceeded that of any previous year, due largely to the additional labor made available by

the Works Progress Administration. The complete list of publications issued will be found in the Report under the heading "Division of Printing"; details concerning their distribution are reported under the heading "Division of Publications."

Sales, on consignment, of books published under auspices other than those of the Museum, were continued. These included works from the authorship of members of the Staff, and books otherwise connected with the institution. Notable among the additions to such books in 1936 is *Artist and Naturalist in Ethiopia*, a day-by-day record of experiences during the Field Museum–*Chicago Daily News* Ethiopian Expedition (1926–27). This was written by Dr. Wilfred H. Osgood, Chief Curator of the Department of Zoology, who led the expedition, and the late Louis Agassiz Fuertes, noted artist who accompanied it. Some of Fuertes' paintings are reproduced in the book, which is published by Doubleday Doran and Company, New York. Especially interesting also is *Heads and Tales*, a unique book by Malvina Hoffman, the noted sculptor who created the Races of Mankind sculptures in Chauncey Keep Memorial Hall. In this book she has combined her autobiography and the story of her work in various parts of the world for Field Museum. It contains 278 illustrations. Charles Scribner's Sons, New York, are the publishers. The story of the Field Museum–Williamson Undersea Expedition to the Bahamas (1929) is told in *Twenty Years Under the Sea*, by J. E. Williamson, noted submarine explorer who led the expedition. It is profusely illustrated with pictures of undersea life. The publishers are Hale, Cushman and Flint, of Boston.

The Museum continued its relations with the Works Progress Administration of the federal government. The number of men and women workers assigned to the Museum ranged from 114 to 204 at different periods, and their total working time aggregated 230,100 hours. Wages, paid to these workers by the federal government, totaled $139,579. In previous years, workers came also through the Illinois Emergency Relief Commission and other agencies, but in 1936 all were consolidated under the authority of the WPA.

As in the other years since the latter part of 1933, when the Museum began its cooperation with state and federal agencies for the relief of unemployment, the work has been of the most varied character, individuals being assigned to duties in accordance with their past experience and training or native ability. Thus, a few have proved capable of handling even scientific research projects and other work of a professional character; others have been able to

assist in tasks requiring artistic talent or highly skilled artisanship. Naturally, the majority are employed at more routine things such as clerical work, and manual labor, both skilled and unskilled. The Division of Printing has been one of the largest users of the skilled labor, and has been enabled to produce an unprecedented number of publications and other items of printed matter as a result of the additional help made available. All of the scientific Departments, and many other Divisions of the Museum, have benefited by the large numbers of relief employes assigned to such tasks as cataloguing, filing, typing manuscript and records, cleaning specimens, mounting photographs, etc. Details of this work will be found in the sections of this Report devoted to each Department and Division. It should be noted that the relief workers have been employed exclusively to accomplish objectives which could not and would not have been undertaken if these people had not been made available. The number of regular employes on the Museum's own payroll has not been reduced in consequence—it has been slightly increased, in fact. The Museum's own Staff members are occupied with the normal scientific and educational work of the Museum, and the supervision of the WPA forces.

It is not possible to over-emphasize the importance of the work accomplished during the past three years with the aid of the workers assigned by the Illinois Emergency Relief Commission, the Works Progress Administration, and other governmental agencies for the alleviation of unemployment. At no time in its history has Field Museum been able to afford the employment of sufficient clerical and other help to keep pace with the demands imposed by the immense amount of incoming material for its rapidly growing collections. It must be remembered that this vast treasure house has been built up in the short span of forty-two years, during which it has reached, in the magnitude of its collections and activities, a stage comparable to that of institutions which had been in existence scores and even hundreds of years earlier. Therefore, many details have had to be somewhat neglected to permit the achievement of larger objectives. Now, through the efforts of the many relief workers, the Museum has made great progress toward the completion of important tasks heretofore unavoidably postponed. These include the classifying, cataloguing and recording of many thousands of specimens which for years have seriously congested the storage facilities of all the scientific Departments, and which under the existing conditions had no usefulness as reference material.

Likewise, great gains have been made in the repairing and preparation of stored specimens useful for exhibition purposes as well as research. Thus, today, Field Museum's catalogues and records, and its huge accumulations of stored specimens, are at last rapidly reaching a most satisfactory condition, and some long delayed exhibits are being installed. All this work has yielded results which, in turn, have made possible the issuance of many additional scientific publications of importance. From this résumé it is readily apparent that the assistance rendered by the relief workers has enabled the undertaking and pushing forward of an extensive program of work which could not have been attempted for years to come if the regular Museum Staff had been unaided.

The Art Research Classes conducted at the Museum in cooperation with the Art Institute of Chicago were continued as in each year since 1922. Mr. John Gilbert Wilkins, a member of the faculty of the School of the Art Institute, who has been in charge since the classes were first established, remained as instructor. Approximately one hundred students participated, and courses were given, as usual, during the spring, autumn and winter, the curriculum including drawing, painting, illustration, design, and sculpture. In the summer there was a special class for teachers and others who are able to attend only during that season. Animals, plants, anthropological material, and other Museum exhibits are used by the students as the basis of their art creations. The Museum also provides a classroom and other working facilities. Many creative artists and art teachers have begun their careers in these classes.

For young children, classes were again held at the Museum by the Saturday School of the Art Institute. Enrollment numbered nearly 100. These classes are for children ranging from fourth grade elementary pupils to those of high school age.

The Museum building and equipment were maintained in satisfactory state by the working forces directed by the Superintendent of Maintenance and the Chief Engineer. As usual, many improvements were made, some of the more notable of which are outlined herewith:

For the Department of Anthropology, Hall K on the ground floor, formerly used as a storage room, was emptied and cleaned, and a large case of the type that merges with the architecture of the hall was built for the installation of an ancient gateway from Kish, collected by the Field Museum–Oxford University Joint Expedition to Mesopotamia. This entire hall was renovated, ceilings and walls

being channeled and replastered, drop ceilings hung in the niches to conceal piping, and new wiring installed. On the north wall of the east end a series of plaster friezes was hung. Eleven floor cases were remodeled and equipped with light boxes, and twenty cases were removed to the Anthropology workshop on the third floor for reinstallation of exhibits, after which they were returned to the hall. On the third floor, all furniture in the office of the Curator of Sinology was repaired and refinished, as well as two desks for other offices. A room was equipped with steel wire guards on windows and door, to safeguard the valuable additions to the jade collection which are temporarily stored there.

In H. N. Higinbotham Hall (Hall 31), which is under the joint supervision of the Departments of Anthropology and Geology, all wall cases were removed to the third floor for reinstallation, and later returned to their places in the hall.

For the Department of Zoology new cases were constructed for two exhibits—the white-tailed gnu group and the okapi, and a case was remodeled for the installation of a group of guereza monkeys which was in preparation. All three of these cases are for Carl E. Akeley Memorial Hall (Hall 22). In the Hall of Birds (Hall 20) three cases were trimmed and glazed. In Hall 19, devoted to osteology, skeletons exposed on open mounts were cleaned. Groundwork for a case to contain the takin exhibit was built in the carpenter shop and taken to the taxidermy shop on the fourth floor for assembly. On the third floor, in the offices and other rooms assigned to the Division of Fishes, steel shelving of cabinets in Room 86 was enclosed with twenty steel doors; new cabinets and large bookcases were built and installed in Room 88, and old cabinets were refinished. In the Division of Birds, filing cabinets were remodeled and new drawers made; four frames were built for large maps, and 150 storage trays were rebuilt. Cases for storage of egg specimens were removed from Room 99 to the south central area of the third floor, and Room 99 was converted into a workroom for the making of accessories used in zoological exhibits. For this purpose, four large cabinets with racks were built in this room, and gas stoves, compressed air apparatus, and work benches were installed. In the room under the north entrance steps of the Museum building, a compressed air line was installed for use in operations necessary in the cleaning of small mammals in benzine.

Services performed for the Department of Geology include the construction of two large bases in Ernest R. Graham Hall (Hall 38)

for the fossil ground sloths and the Rancho La Brea "tar bed" group of skeletons; the building of three small floor cases, two screens for standard floor cases, and the shifting of cases in the same hall; the building of a case with a special arrangement for the alternation of ultra-violet and ordinary light, required for the display of fluorescent minerals in Clarence Buckingham Hall (Hall 35); the fastening of twenty-five relief maps to the walls of the bridges connecting Hall 35 with Halls 34 and 36; and the remodeling of the case in Hall 35 which contains a miniature representation of the Natural Bridge of Virginia. Sixteen standard floor cases for Halls 34 and 35 were built by a contractor, but were glazed and paneled by Museum carpenters. For the paleontological laboratories on the third floor, 200 storage trays were remodeled. New shelving was installed in the Geology library.

The principal work for the Department of Botany included hanging and trimming four large mural paintings in the Hall of Plant Life (Hall 29), and resetting the exhibition cases in the half of Hall 25 devoted to palms so that they form pleasing alcoves instead of extending out in parallel rows. In Room 9 on the third floor racks of piping were constructed for storage of wood specimens. Angle iron racks were built in Room 20, and this room was furnished with laboratory equipment such as gas and compressed air lines for air brush work, thus enlarging the facilities of the Plant Reproduction Laboratories.

Thirty-six exhibition halls were cleaned, and painting and patching of walls and ceilings were done where necessary.

On the third floor, to enlarge Room 120, which is an annex to the general Library, the adjacent janitors' closet and part of the women's wash room were torn out, and a new wall and double doors were built at the south end of the room. This resulted in improving access from the main Library room.

A case which formerly contained Japanese tapestry was dismantled, and the glass salvaged from it was re-cut for use in cases in Hall 20.

Four new signs, containing information about the Museum for the public, were built, and two of these were erected on the lawns in front of the building.

Eighty-eight window sashes on the third floor were repaired and reset; six new sashes and frames were installed in Room 54, and one new sash in Room 81. One hundred and forty-four new window shades were hung in Halls 25, 26, 27, 34, 35 and 36.

The shipping room and adjacent area under the south entrance steps were cleaned, and a quantity of copper, brass and iron salvaged there was sold. The freight elevator was overhauled, and new shafts and bearings installed.

Roofs of three of the light courts were recoated, and the main roof was patched with roof cement. Six downspouts for removing rain and snow were repaired, and new heads installed on two of them.

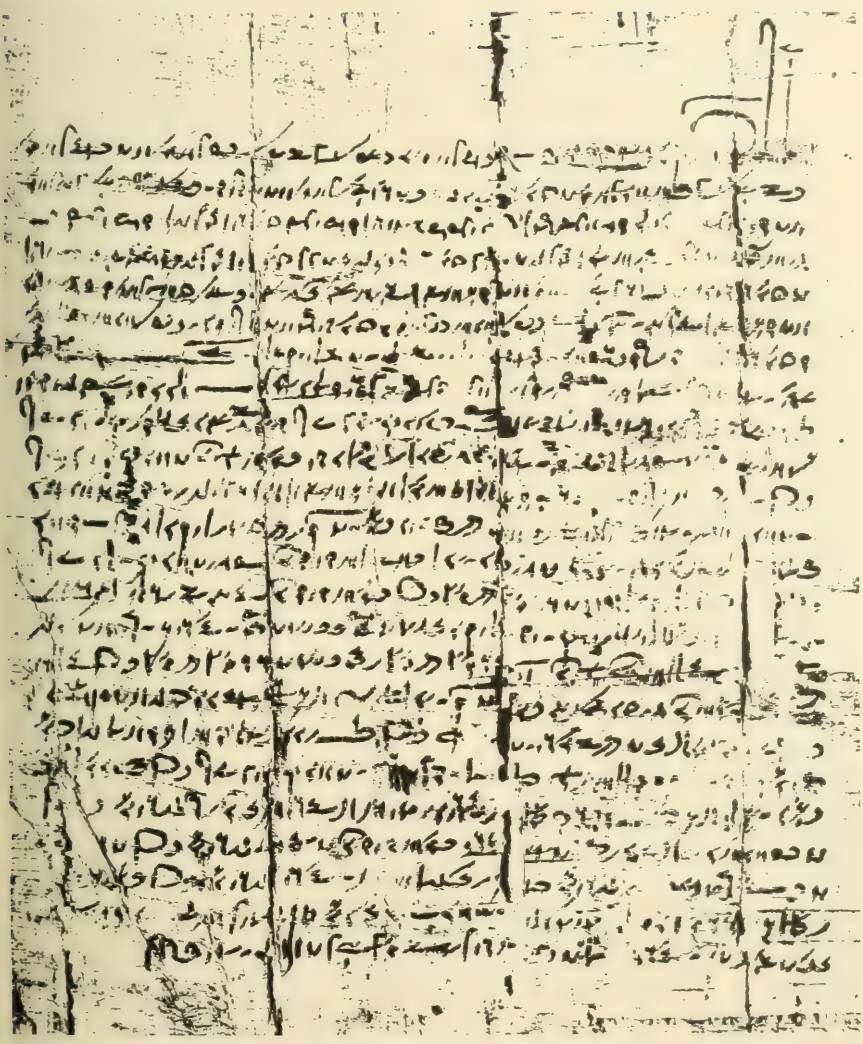
Tuck pointing was done where required about the building, notably on the north, south and west entrance steps, the flagpole bases, in six light courts, the shipping room and boiler room, and on the roof coping.

In the boiler room forty new buckets were made and attached to the coal conveyor; twenty-six new tubes were installed in two of the boilers; all brick work of the furnaces was patched, and all other equipment in the boiler room was overhauled and reconditioned. A new system of boiler feed water treatment was instituted, and extremely satisfactory results produced.

The Museum heating plant continued, under contract, to furnish steam required by the John G. Shedd Aquarium and Soldier Field during the months when heat was required. A total of 12,964,204 pounds of steam was provided for the Aquarium, and 6,654,064 for Soldier Field.

By complying with certain restrictions in the use of electric light and power, the Museum continued to enjoy favorable rates under the "peak load contract" entered into with the Commonwealth Edison Company several years ago.

Under a federal Works Progress Administration project carried out for the Chicago Park District, improvements of value to the Museum were made. Five concrete walks were constructed across the Museum lawns to the terrace steps of the building—two on the north, two on the south, and one on the west side of the building. Two large automobile parking spaces were prepared, one at the Museum's southeast lawn with a capacity of approximately 600 cars, and one facing the north entrance of the building with space for 400 cars. A large number of trees and shrubs were planted around the building. The section of Leif Eriksen Drive northeast of the Museum, connecting with Field Drive, was widened and repaved, and is now open to northbound traffic, to which it will be restricted; Columbus Drive, to the west of the Museum, is now designated as a one-way boulevard for southbound traffic. An underpass for pedestrians was completed beneath Eriksen Drive, linking the



ANCIENT EGYPTIAN PROMISSORY NOTE

Hall J

Written in Demotic script, and dated about 108 B.C. From Thebes, Egypt

Presented to the Museum by the late Edward E. Ayer, 1894

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approaches to Field Museum and the John G. Shedd Aquarium, thus facilitating the safe passage of visitors from one institution to the other.

In the pages which follow will be found reports in detail of the year's activities in each of the Departments and Divisions of the Museum:

DEPARTMENT OF ANTHROPOLOGY

EXPEDITIONS AND RESEARCH

The Department of Anthropology undertook no expeditions in 1936.

During the year the following anthropological publications were issued by Field Museum Press: an archaeological report, *Lowry Ruin in Southwestern Colorado*, by Chief Curator Paul S. Martin; Part 2 of an archaeological report, *Archaeology of Santa Marta, Colombia*, by Dr. J. Alden Mason, formerly Assistant Curator of Central and South American Archaeology at Field Museum; an archaeological report, *Egyptian Stelae in Field Museum of Natural History*, by Dr. T. George Allen, Research Associate in Egyptian Archaeology; a leaflet, *Primitive Hunters of Australia*, by Curator Wilfrid D. Hambly; and a leaflet, *Archaeology of South America*, by Mr. J. Eric Thompson, formerly Assistant Curator of Central and South American Archaeology.

In press at the close of the year were the following publications: *Textiles of the Early Nazca Period*, by Dr. Lila M. O'Neale, of the University of California, and *Cañete Valley*, by Dr. A. L. Kroeber, of the University of California (Research Associate in American Archaeology at Field Museum), these two publications being Parts III and IV of Volume II of the Anthropology Memoirs Series; and *Skeletal Material from San José Ruin, British Honduras*, by Curator Hambly. Dr. Hambly has prepared for publication also a monograph entitled *Source Book of African Anthropology*, which will be issued in 1937.

Curator Henry Field was granted leave of absence to attend Harvard University from September, 1936, to June, 1937, for the purpose of taking several courses on physical anthropology from Dr. E. A. Hooton, and also to prepare for publication a report on the physical anthropology of the peoples of the Near East.

Mr. C. Martin Wilbur, who assumed his duties as Curator of Sinology on October 1, has examined the various papers and manuscripts left by the late Dr. Berthold Laufer, former Curator of the Department of Anthropology. Mr. Wilbur has been fortunate enough

to find five nearly completed manuscripts treating of the domestication of various plants and animals. These are now being carefully edited by him for publication in the near future. Further, Curator Wilbur has devoted some time to unpacking the collection of jade objects bequeathed to Field Museum by the late Mrs. George T. (Frances Ann Gaylord) Smith, of Chicago.

Curator Richard A. Martin has spent most of the year cleaning and cataloguing archaeological specimens from Kish. Under his supervision, an arched gateway of stucco from Kish has been completely restored and built into a special case in Hall K. Further, in order to illustrate the history of glyptic art in the Near East from 3200 B.C. to A.D. 350, Mr. Martin selected, for enlarged reproduction, impressions from eighteen cylinder seals and six stamp seals. These impressions, magnified twenty-five times by projection, have been modeled in clay from that projection, and then cast in plaster with the help of the Federal Art Project of the Works Progress Administration. The resultant reproductions have been made into a frieze for which special beam illumination has been provided. The scale for these reproductions is such that the most minute details are clearer (even when viewed at a distance of twenty feet) than they are on the originals when examined with a hand lens. To explain the symbolism on them, and, where necessary, to give a translation of the cuneiform inscriptions, Mr. Martin has written a leaflet, entitled *Reproductions of Seal Cylinder Impressions*, which will be published in the near future.

Dr. J. Alden Mason, formerly Assistant Curator of Central and South American Archaeology at Field Museum, and now Curator of the American Section, University Museum, Philadelphia, spent four weeks in Chicago. During this period he engaged in studies at the Museum, taking notes on pottery which he excavated at Santa Marta, Colombia, South America, as leader of the Marshall Field Archaeological Expedition to Colombia (1922–23). From these data Dr. Mason will prepare the third part of his report on the Tairona culture of Colombia.

A generous portion of the time of the staff of this Department has been devoted to correspondents and to scholars, students, and other visitors calling for information.

Six signed articles and fifty-two unsigned items were contributed by the Department staff to *Field Museum News*. The staff also supplied data used in twenty-six newspaper articles.

ACCESSIONS—ANTHROPOLOGY

Accessions received and recorded during the year amount to twenty-six, of which twenty-two are gifts, and four resulted from exchanges. The total number of objects received in these accessions is 2,095.

A collection of rare Chinese art objects, valued at several hundred thousand dollars, was received by the Museum in the settlement of the estate of the late Mrs. George T. (Frances Ann Gaylord) Smith, of Chicago, who died on September 8. There are 718 pieces in the collection, nearly all of them representing the Ching or Manchu dynasty (1644–1912). Included are jade objects, porcelains, snuff bottles, textiles, beaded belts, screens, ivory, semi-precious stones and other materials. Arrangements are being made for the addition of these objects to the exhibits, after they have been catalogued and labeled. The jades in this bequest, numbering approximately one hundred, when added to the large number already on exhibition in the Museum's special hall devoted to Chinese jades (Hall 30), will, it is believed, make the Museum's collection in this field the foremost in America, and possibly in the whole world.

Mr. Eugene F. McDonald, Jr., of Chicago, presented a painted conch-shell trumpet from the State of Nayarit, Mexico, a rare specimen representing a little-known culture.

From Mr. V. F. C. Richardson, of Haifa, Palestine, the Museum received eighty-eight samples of human hair from Transjordania and Syria, valuable in the physical anthropology researches being conducted by this institution. An Eskimo's whale harpoon, and a sealskin float for such an implement, as well as a Cree Indian rabbit-fur blanket, were given to the Museum by Mr. Clarence Burley, of Winnetka, Illinois. These objects represent cultures of the Hudson Bay region of Canada.

Two hundred and thirty stone and bone implements, obtained from a rock shelter in Rhodesia, South Africa, were presented by Mr. and Mrs. Rudyerd Boulton, of Chicago.

Mr. Henry Field, Curator of Physical Anthropology, contributed twelve puppets, twenty-one playing cards, and one battle-ax, from Iran, and two skulls of modern Arabs.

Dr. Albert B. Lewis, Curator of Melanesian Ethnology, presented a Burmese betel-nut box of woven strips of bamboo.

His Highness the Maharaja Gaekwar Sir Savaji Rao III, ruling monarch of Baroda State, India, presented a repoussé low table

composed of silver, copper, and brass; a buffalo-effigy carved from teakwood, and a cradle, representative of the arts of his country.

A series of fifty-two pieces of glazed pottery from Pecos Pueblo, New Mexico, was received from Phillips Academy, Andover, Massachusetts. These specimens were excavated by Dr. A. V. Kidder, of the Carnegie Institution, Washington, D.C., during the seasons of field work from 1919 to 1928.

Mrs. Philip Chancellor, of Hollywood, California, presented two skulls with modeled faces from northern New Guinea.

A man's costume of tree-bark is the gift of Mr. Henry W. Nichols, Chief Curator of the Department of Geology.

The Museum is indebted to Mr. Harold S. Gladwin, of Gila Pueblo, Globe, Arizona, for a gift of fifty pieces of Basket Maker pottery from Colorado.

From the Federal Art Project (Illinois) of the Works Progress Administration the Museum received twenty-four plaster reproductions of impressions of Babylonian and other ancient seal cylinders.

CATALOGUING, INVENTORYING, AND LABELING—ANTHROPOLOGY

Entries were made of twenty-two of the twenty-six accessions received during the year. Likewise, there were entered twenty-two accessions of previous years.

The number of catalogue cards prepared during the year totaled 5,575, of which 2,286 were entered. The total number of catalogue cards entered from the opening of the first volume is 214,278.

The catalogue cards for the current year were distributed as follows: North American archaeology and ethnology, 387; Central and South American archaeology and ethnology, 27; European archaeology, 29; African ethnology, 399; Madagascar ethnology, 9; Philippine ethnology, 14; Malayan ethnology, 359; Kish archaeology, 4,057; Near Eastern archaeology, 184; Korean ethnology, 12; Burmese and Indian ethnology, 20; Formosan ethnology, 30; Chinese ethnology, 1; physical anthropology, 47.

The Division of Printing supplied a total of 2,053 labels for use in exhibition cases. These labels were distributed as follows: Navaho textiles, 227; archaeology of the Southwest, Lowry Ruin, 250; Northwest Coast Indians, 3; China, 30; Gem Room, 237; Malay Peninsula, 347; Egypt, 14; Philippine Islands, 2; Burma, Ceylon, Siam, Korea, 943. The Division of Printing also supplied 18,430 catalogue cards and 25,162 index cards.

The number of additional photographs mounted in the departmental albums is 818. Three new photographic albums were opened. To the label file, seventy-nine cards were added.

Workers assigned to the Department by the Works Progress Administration of the Federal government performed much valuable clerical and repair work. These assistants, varying in number from nine to eleven, worked an average of thirty hours per week. Their principal accomplishments during the year were as follows: 2,300 pages of manuscript typed; 23,304 library cards typed and filed; 1,861 captions for photographs typed; 310 pages of manuscript read; 8,230 pamphlets catalogued and checked; 14,109 numerical index cards for departmental albums prepared and filed; 8,486 photographs mounted; 3,293 captions mounted; 1,881 cards in photograph file numbered and filed; 978 labels pasted; 6,125 index cards perforated; 73 pieces of textiles (Persian, Korean, East Indian) repaired; 500 pieces of pottery washed; 149 pieces of pottery repaired; 786 pieces of pottery numbered; 5,239 flints numbered; 4,716 flints washed; 7,450 catalogue cards numbered; 67 boxes of beads cleaned; 916 pieces of stucco work from Kish repaired; 6,034 ethnological specimens sorted; 2,500 Kish archaeological specimens cleaned, catalogued, and studied; 188 outline drawings made for publications; 1,562 hours spent on reconstruction of Kish palace gateway; 1,009 hours spent in general work; 71 hours spent in identifying Hopi pictures, and 192 hours spent on statistical work.

INSTALLATIONS AND REARRANGEMENTS—ANTHROPOLOGY

The Navaho textiles in Hall 6 have been rearranged in chronological order so that a person interested in this subject can note the decadence in technique that has occurred over the years in the contrast of the fine blankets of old with the poor rugs produced by the modern Indians. Moreover, new labels have been supplied which indicate the kinds of wool and dyes used in each specimen.

The pottery and the bone and stone implements from Lowry Ruin in southwestern Colorado, the excavation of which was made possible by the Julius and Augusta N. Rosenwald Archaeological Expedition Fund, were placed on exhibition in Hall 7.

All of the jewelry in H. N. Higinbotham Hall (Hall 31) was reinstalled and relabeled in newly lined cases.

Curator Lewis completed the reorganization of Hall G (ethnology of the Malay Peninsula and the Malay Archipelago). Eight cases

were reinstalled in such a way as to permit exhibition of many specimens never before shown in this Museum.

An Egyptian promissory note written in Demotic script on papyrus was installed in Hall J, along with a complete literal translation made by Dr. Nathaniel Julius Reich, of Philadelphia.

Installation of material from India, Ceylon, Siam, Burma, and Korea, for future exhibition in Hall K, has proceeded apace. This work is being performed by Dr. Lewis, who has taken great pains to arrange and label these specimens. It is hoped to finish the installation of this material by the end of 1937.

The archaeological specimens from Kish, resulting from the Field Museum–Oxford University Joint Expedition to Mesopotamia (1922–32), which are to be exhibited in the east third of Hall K, have not yet been installed. The delay is caused by the necessity of washing, chemically treating, and cataloguing these specimens—a task which must necessarily proceed slowly. Installation, however, may be started by next fall.

At various times during the year the storage and poison rooms have been overhauled. All of the North American ethnological specimens have been sorted and replaced in proper order.

New labels for the Races of Mankind sculptures by Malvina Hoffman in Chauncey Keep Memorial Hall (Hall 3) have been provided. In addition to giving the names of racial types, these labels bear small maps on which are indicated the regions inhabited by the peoples of each group represented in the sculptures.

Mr. Tokumatsu Ito, who is in charge of special repair work for the Department, treated, repaired, or restored 333 objects. Mr. Robert Yule, assistant and letterer in the Department, marked identification numbers on 2,153 objects during the year. Eight cases of invertebrates were installed for the Department of Zoology.

DEPARTMENT OF BOTANY

EXPEDITIONS AND RESEARCH

In the summer of 1936 Mr. Emil Sella, of the Plant Reproduction Laboratory staff, visited the mountains of Wyoming to obtain material for an exhibit of alpine vegetation now in preparation for the Hall of Plant Life (Hall 29). A large amount of necessary material was collected, representing characteristic plants of the alpine region.

Curator Llewelyn Williams completed his detailed descriptions of the woods he collected in 1929–30 in northeastern Peru during the course of the Marshall Field Botanical Expedition to the Amazon. In preparation of his report, recently published as Volume XV of the Botanical Series, he spent parts of May and June examining microscope slides of this material at Yale University School of Forestry. This study was made possible through the cooperation of Dr. Samuel J. Record, Professor of Forest Products at Yale, and Research Associate in Wood Technology at Field Museum.

Associate Curator J. Francis Macbride continued his activities, described in the Reports of 1929 to 1935 inclusive, of photographing type specimens of tropical American plants preserved in European herbaria. Early in 1936 Mr. Macbride completed the work at Madrid, of which mention was made in the 1935 Report. He studied there particularly the original collections of Ruiz and Pavón, the first botanists to explore the flora of Peru. These collections are of particular interest to Field Museum because of the publication, *Flora of Peru*, four parts of which were issued by this institution in 1936. The Madrid herbarium contains also the earliest collections from many other parts of South America, and from Mexico, obtained by scientific expeditions dispatched to the American colonies by the Spanish crown a century and a half ago.

Work at Madrid was made pleasant and facilitated in every manner by the whole-hearted cooperation extended by the Director of the Jardín Botánico, Dr. Antonio Garcia Varela, and by Dr. José Cuatrecasas. A large number of type specimens were lent for use at Geneva, where they could be photographed conveniently.

A signal courtesy was the loan to Field Museum, by Dr. Varela, of the Sessé and Mociño Herbarium of Mexican plants, which was sent to Chicago for study by Curator Paul C. Standley. This herbarium, consisting of 7,752 sheets of specimens, was gathered in Mexico about 1790, and was the first important plant collection made in Mexico. Its history is romantic, but too extensive to be detailed here. A partial report upon it, prepared after the return to Spain of the celebrated collectors, Martin Sessé and Don José Mariano Mociño, remained unpublished until 1890, by which time it was obsolete, its contents having been anticipated by publications of later botanists whose manuscripts had been published promptly.

The Sessé and Mociño Herbarium has remained at Madrid, as its collectors left it, for more than a century, during which it has been inaccessible to botanists. The loan of it to Field Museum in 1936

was made so that the specimens could be determined and named according to present knowledge, and the names ascribed to the plants by Sessé and Mociño in their *Flora Mexicana* and *Plantae Novae Hispaniae* might be referred to their proper position in literature. This work was still in progress at the end of the year. The aid of specialists in several groups has been enlisted, and it is expected that a volume enumerating the contents of the herbarium will be published by Field Museum. Through the great generosity of the staff of the Madrid herbarium, Field Museum is permitted to retain duplicates or fragments of many of the specimens. These, for the most part, will be their only representation outside of Madrid.

After finishing his work at Madrid, Mr. Macbride returned to Switzerland, where he continued photographic work and study of collections from South America. As in previous years, he received at Geneva generous assistance from Dr. B. P. G. Hochreutiner, Director of the Conservatoire et Jardin Botaniques, and Dr. Charles Baehni, a member of its staff.

In the early summer, Mr. Macbride went to Vienna, where, as upon his visit in 1935, he received kindly assistance from Dr. Hermann Michel, Director of the Naturhistorisches Museum, and Dr. Karl Keissler, Director of its Botanical Section. Studies were made of the important South American collections there, especially those of Poeppig from eastern Peru. Through the courtesy of Dr. Keissler, Mr. Macbride was permitted to take selected material to Geneva for photographing.

At the end of 1936, Mr. Macbride returned to Geneva, where he plans to complete his photographic work quickly, and then transfer his activities to another center.

The great value of the type photographs assembled by Mr. Macbride becomes more apparent each year. There have been received so far more than 30,000 negatives; others made during 1936 have not yet reached Chicago, but are expected early in 1937. The photographs are exceptionally useful because of their high quality, and after having had them available at Field Museum for the past seven years, it would be a hardship for the botanical staff to do without them. They are becoming better known outside the Museum, also, and are constantly more appreciated among American and other botanists, particularly for monographic studies. Prints from the negatives are made available by the Museum to botanists generally at the cost of production. During the past year 1,799 such prints were purchased by American institutions, and many

TRAVELER'S TREE OF MADAGASCAR

Mural painting by Charles A. Corwin in Hall of Plant Life (Hall 29)

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others were accepted in exchange for similar type photographs needed by Field Museum.

The Herbarium has been consulted frequently during 1936 by visiting botanists and others from near and remote parts of the United States, and from foreign countries as well. It has, of course, been utilized most frequently by scientists and students from the many large universities in Chicago, and elsewhere in Illinois and near-by states, since it is the only large herbarium existing within a radius of many hundreds of miles. Naturally, for the staff of the Museum's own Department of Botany, it has been a source of information to which constant reference is made.

The time of the Herbarium staff has been occupied fully throughout the year by care of the collections and determination of the many large shipments of plants received for study. The employment of a large number of workers supplied by the federal Works Progress Administration during most of the year has made possible the undertaking of a vast amount of extra work, which could not have been done without such additional assistance. The direction of the WPA workers, however, has made special demands upon the time of the regular staff of the Department. There have been mounted and added to the Herbarium 62,259 sheets of specimens and photographs, and more than 4,000 printed or typewritten descriptions of new species of plants. This number is greater than that for 1935, and unusually large for any herbarium of the world. The total number of mounted specimens in the Herbarium is now 854,245. All old material that had been in storage for many years has been mounted, and practically all the current collections, and all prepared material, has been distributed promptly into the Herbarium.

A good beginning was made at cleaning and repairing the sheets in the general Herbarium. Much was done toward rearrangement of special groups according to recently published monographs. Many hundreds of new covers for genera and species were written for the Herbarium, which was searched for misplaced specimens such as, in spite of utmost care, always are found in every study collection.

Submitted to the Herbarium for study and determination were at least 22,510 specimens of plants, chiefly from tropical America, but representing also many other regions. Nearly all of these were determined during the year. While some of this material was returned to the senders after names had been supplied, by far the greater part was retained for the Museum. In addition, there were determined, but not preserved for the permanent collections, many

plants from the Chicago region and elsewhere that were brought to the Museum by visitors, teachers, and students, or forwarded by mail. Hundreds of inquiries for information regarding the most diverse botanical subjects were answered by mail and telephone.

Botanical publications exceeded in size and scope those of any previous year of the Museum's history, and included three complete volumes of the Botanical Series. Volume XI was completed by Number VI of *Studies of American Plants*, by Mr. Paul C. Standley, Curator of the Herbarium, and *Monograph of the Genus Coreopsis*, by Dr. E. E. Sherff, Research Associate in Systematic Botany.

Volume XII of the Botanical Series is devoted to *The Forests and Flora of British Honduras*, a product of the joint authorship of Professor Samuel J. Record of Yale University (Research Associate in Wood Technology for the Museum) and Curator Standley. While listing all flowering plants known from British Honduras, the volume is devoted principally to the woody plants, and includes brief accounts of the distribution and woods of the principal trees.

There have been issued four large parts of Volume XIII, the *Flora of Peru*, under the authorship of Associate Curator J. Francis Macbride, with the assistance of specialists in certain groups. This work, when completed, will constitute a volume of six parts and several thousand pages, presenting a descriptive account of the many thousands of flowering plants known from Peru. While based primarily upon the large collections obtained by the Museum's three expeditions to Peru, use has been made also of material in other herbaria of America and Europe.

Volume XIV is devoted to an *Index of American Palms* by Chief Curator B. E. Dahlgren. It enumerates all plants of this group described before the end of 1935, citing all published descriptions and Field Museum photographs of type specimens, synonymy and vernacular names, and includes an extensive bibliography, and lists of palms known from each American country. The volume includes also an enumeration, by Professor A. C. Noé, of the University of Chicago, Research Associate in Paleobotany at Field Museum, of fossil palms discovered to date on the American continent.

Volume XV, entitled *Woods of Northeastern Peru*, by Curator Llewelyn Williams, consists of descriptions of the woods obtained by the Marshall Field Expedition to the Amazonian region of Peru in 1929–30. The report includes brief descriptions of the trees of

this region, with citation of vernacular names, and notes upon uses of the more important woods.

During the year Curator Standley published fifteen papers based directly or indirectly upon the Herbarium collections, the most important being treatments of the Gramineae (grass family) and Rubiaceae (coffee family) in the *Flora of Peru.*

Two botanical leaflets were published by the Museum: *Common Mushrooms,* by Mr. Leon L. Pray, and *Old-fashioned Garden Flowers,* by Mr. Donald Culross Peattie.

Members of the Department staff prepared for *Tropical Woods* numerous abstracts and reviews of current literature relating to woody plants of the tropics. They contributed many signed articles and other items for *Field Museum News,* besides data for twenty-four newspaper articles.

ACCESSIONS—BOTANY

The Department of Botany received 275 accessions, comprising 41,477 specimens, during 1936. Both the number of accessions and the number of specimens were substantially larger than in the preceding year, and their value was much greater. Included were specimens for the Herbarium, for the exhibits, and for the wood and economic collections. Of the total number, 22,047 were gifts, 18,238 were received in exchanges, 608 were purchased, and the remainder acquired from miscellaneous sources.

Of the total receipts, specimens for the Herbarium amounted to 41,457—plant material, photographs, and typed descriptions. As always is the case, much material of exceptional value was received through exchange. First in scientific importance are 6,624 complete or fragmentary specimens from the Jardín Botánico of Madrid. Half of these are from the Sessé and Mociño Mexican Herbarium mentioned under the heading "Expeditions and Research"; the rest consist of duplicates of various unique series preserved at Madrid, such as those of Née, Ruiz and Pavón, which were described in part by Cavanilles, Lagasca, Ortega, and other Spanish botanists. Almost all these specimens are duplicate types, of which there is no representation elsewhere in America, and very little in Europe outside of Madrid. This historical material gives Field Museum a quite unexpected wealth of authoritative specimens of prime value for study purposes.

Similar in nature are two other series received from European herbaria: 1,773 specimens forwarded by the Conservatoire et Jardin

Botaniques of Geneva, and 596 from the Naturhistorisches Museum of Vienna. The former is noteworthy for a large number of critically determined European fungi of historical significance, as well as many historical specimens of tropical American flowering plants. The collection sent from Vienna contains much interesting material from South America.

From the Musée National, Prague, Czechoslovakia, were received 192 specimens collected by Thaddaeus Haenke, one of the first botanical explorers to visit Mexico. About 500 sheets of Haenke's collections, made a century and a half ago, were determined at Field Museum and found to include type material of many Mexican species obtained by this celebrated collector.

Other noteworthy receipts through exchange include the following: from the Naturhistoriska Riksmuseet, Stockholm, through Dr. Gunnar Samuelsson, 624 specimens, principally representing Brazil and Hispaniola; from Göteborgs Botaniska Trädgård, Sweden, through Dr. Carl Skottsberg, 735 specimens, chiefly Swedish; from the Imperial Forestry Institute, Oxford, England, through Dr. J. Burtt Davy, 495 specimens representing India and Africa; from the Gray Herbarium of Harvard University, Cambridge, Massachusetts, 582 specimens, largely Brazilian, together with numerous photographs of type specimens; from the United States National Museum, Washington, D.C., 763 specimens and other items, chiefly of tropical American origin; from De Pauw University, Greencastle, Indiana, through Professor T. G. Yuncker, 440 Honduran specimens; from the Bailey Hortorium, Ithaca, New York, through Professor L. H. Bailey, 423 Mexican specimens.

Among gifts of herbarium specimens accessioned during 1936 are several of outstanding importance. Undoubtedly first in value is one of 8,190 specimens from the Museo Nacional of San José, Costa Rica, received through the courtesy of the Director, Professor Juvenal Valerio Rodriguez. This gift comprises part of the unique series assembled during the past twenty-five years by Professor Alberto M. Brenes, official collector for the Costa Rican Museum, who is well known among orchid students for his extraordinary contributions to knowledge of that fascinating family. This herbarium is of immediate practical value for use in preparation of the *Flora of Costa Rica*, upon which Curator Standley is now engaged.

A gift especially appreciated is that from Mr. William H. Dunham, of Evanston, Illinois, who presented his private herbarium of 2,000 sheets. Its importance lies in the fact that much of it was

collected during the past fifty years in parts of Chicago from which all native vegetation has long disappeared. It makes an important and irreplaceable addition to the Illinois Herbarium maintained by Field Museum.

From the Department of Botany of the University of Chicago were received 3,192 specimens of Illinois and South Dakota plants, which had served as the basis for published ecological reports. The major portion of the collection is from the Black Hills of South Dakota, a region poorly represented previously in the Museum Herbarium, although of botanical interest because of the association there of eastern and Rocky Mountain types of vegetation.

The Department of Botany of the University of Texas, through Professor B. C. Tharp, presented 2,452 specimens, partly from little known mountains of extreme western Texas, but chiefly from various states of northeastern Mexico. The Mexican plants, obtained in areas unvisited previously by collectors, were determined at Field Museum, and proved unexpectedly rich in new species, as well as in species known before only from a few collections.

Numerous other gifts of herbarium specimens merit mention, but there is space only for the following: 283 specimens and 919 negatives of type and other specimens, from Dr. E. E. Sherff, of Chicago, representing chiefly Compositae and special groups of Hawaiian plants; 835 specimens collected in Chihuahua and Sonora, Mexico, by Mr. Howard Scott Gentry, of Westmoreland, California, and illustrating many new or rare species; 317 sheets, chiefly of South American trees, from the School of Forestry of Yale University, through Professor Samuel J. Record; 355 specimens from the north coast of Colombia, presented by Reverend Brother Elias of Barranquilla; 322 specimens from the high mountains of Peru, presented by Professor J. Soukup of Puno, and of definite value for citation in the *Flora of Peru;* 230 specimens from Platt National Park, Oklahoma, presented by the United States National Park Service.

Gifts of economic material and of woods were received from many institutions and individuals. All of these are noted in the List of Accessions (page 99), and mention of some follows herewith.

For addition to the series of vegetable drying and non-drying oils donated by him a few years ago, and now displayed in Hall 28, Dr. Otto Eisenschiml, of the Scientific Oil Compounding Company, Chicago, contributed samples of tea-nut and of crude and refined hempseed oil. The Soya Products Division of the Glidden Company, of Chicago, furnished samples of soya beans, crude and refined oil,

and the various by-products obtained in the extraction of the oil from the beans. Representative of an agricultural crop which has attained increased prominence in the Middle West during the last few years, this material forms an important addition to the exhibits.

Various negatives and photographs of local trees exhibited in Charles F. Millspaugh Hall (Hall 26) were presented by Mr. Hermann C. Benke, of Chicago, who for many years has been a regular contributor to the Department. Mr. Leo R. Kische, of Columbus, Georgia, is the donor of wood samples of twenty-four species of trees, native to the state of Georgia, not represented previously in the study collections. The Armstrong Cork Products Company, Lancaster, Pennsylvania, furnished several acorn-bearing branches of cork oak (*Quercus suber*) to replace some of the cork material in Hall 28. Mr. George N. Lamb, secretary of the Mahogany Association, of Chicago, gave a leafing branch, and fruits, of mahogany (*Swietenia*), collected at Key Largo, Florida.

Through Professor Samuel J. Record, there were obtained from the School of Forestry of Yale University a large number of wood samples for critical study by Curator Williams, as part of the researches undertaken by members of the International Association of Wood Anatomists. From the same source there was received also a log specimen of a sumac (*Rhus sylvestris*), an ornamental tree native to Asia. It has handsome foliage which turns deep red or scarlet in autumn, and possesses toxic qualities similar to those of its close relative, the poison ivy.

As in previous years, specimens of new or little known species of woods for the study collections were received from Dr. Román Sabas Flores, of Progreso, Yucatan. Dr. David A. Kribs, Department of Forestry, Pennsylvania State College, at Mont Alto, Pennsylvania, contributed ninety microscope slides of woods collected several years ago in Liberia for Yale University School of Forestry by Mr. G. Proctor Cooper III.

Other gifts which merit mention were an unusual bifurcated trunk section of choke-cherry (*Prunus virginiana*) from central Illinois, presented by Mr. Ray Lundy, of Chicago; a fruiting branch of winterberry (*Ilex verticillata*), a shrub or small tree common around acid swamps or in bogs in the dune region of Indiana and Michigan, and also a specimen of "saqui-saqui" (*Bombacopsis*), a very light wood closely related to balsa, native to Central and northern South America, both of which were given by Mr. Reginald

Owen, of Evanston, Illinois; leaves, fruits, and fiber of babassú and carnaúba palms, collected during 1935 by Chief Curator Dahlgren in Ceará and Bahia, Brazil; leaves and fruits of blue-palm (*Erythea armata*), collected by Laboratory Assistant John R. Millar near Riverside, California; and a wood specimen of a leguminous vine (*Bauhinia*), presented by Mr. Armando Dugand, of Barranquilla, Colombia.

CATALOGUING, INVENTORYING, AND LABELING—BOTANY

Although no general distribution of duplicate material was made during the year, the Department distributed through exchanges 5,832 herbarium specimens and photographs to various institutions and individuals in North and South America, and in Europe. Eighty-eight lots of plants were lent for study to institutions and individuals in Europe and the American continents, and seventy-one lots were received on loan, for study or determination.

Workers assigned to the Department by the federal Works Progress Administration were of great assistance in reorganization and arrangement of reference material, and did many and various tasks of typing. More than 201,600 cards were written in long hand for permanent or temporary files. Some of the catalogues now in process of preparation will be of extraordinary value when carried to completion.

Several hundred labels for exhibits were revised or entirely rewritten, and reprinted on light-colored stock.

INSTALLATIONS AND REARRANGEMENTS—BOTANY

Owing to the sudden death, shortly before the beginning of 1937, of Preparator Jacob F. Mangelsen, who for many years had been responsible for the preparation of the wood specimens for the halls of American and foreign woods, installations in these halls were interrupted, and no additions were made to either during the past year. Mr. Mangelsen's wide practical acquaintance with woods and woodworking, his great skill, and the intelligent care with which he performed his work, made him, for many years, one of the most valued members of the Department's staff of preparators. With very few exceptions the remaining woods required to complete the display in the Hall of American Woods (Charles F. Millspaugh Hall, Hall 26) are on hand awaiting preparation and installation, as is also a considerable quantity of new material for the Hall of Foreign Woods (Hall 27).

An important addition to the exhibit of food plants in Hall 25 is a small scale diorama of a tea plantation in Ceylon, prepared by Laboratory Assistant John R. Millar. This diorama, a companion piece to that of a coffee plantation described in the Report for 1935, forms a part of the exhibit of tea among the beverage plants at the east end of the hall.

A rearrangement of the cases containing the palm collection on the north side of Hall 25 resulted in a better display, and gives a more spacious appearance to the hall. Minor changes were made in the palm exhibits, with new labels and the installation of some new carnaúba material secured by Chief Curator Dahlgren several years ago in Ceará, Brazil. A new exhibit is that of babassú palms of northern Brazil which yield an edible vegetable oil which recently has become prominent as an import of the United States. Material for this was obtained partly by the Marshall Field Botanical Expedition to the Amazon (1929–30), and partly by collecting and purchase made possible through the interest and generosity of Mr. H. F. Johnson, Jr., of Racine, Wisconsin, a Non-Resident Life Member of the Museum.

To the exhibits in the Hall of Plant Life (Hall 29) were added six important new mural paintings of botanical subjects, the work of the Museum's Staff Artist, Mr. Charles A. Corwin. Thus, with the two installed in 1935, there are now eight completed and in place of the total of fifteen murals planned for the west wall. The new ones, described from time to time during the year in *Field Museum News*, are as follows: Chilean pine (*Araucaria imbricata*), dragon's blood tree (*Dracaena draco*) of the Canary Islands, tree ferns (*Hemitelia* sp.), traveler's tree of Madagascar (*Ravenala madagascariensis*), cucumber trees of Socotrá (*Dendrosicyos socotrana* with *Adenium socotranum*, etc.), and American elm—the last named being pictured in a scene typical of New Hampshire.

Another new installation in Hall 29 is a reproduction of a tall-growing plant of the carrot family, local to the Chicago area—the purple angelica—which was completed during the year by Messrs. Milton Copulos and Emil Sella of the Plant Reproduction Laboratories. It is located in its appropriate place in the hall, where it serves to illustrate the general characters of its order and family. From plant material recently secured, a flowering and fruiting branch of a cassia (*Cassia fistula*), an Indian tree commonly planted in warm countries for ornament and known in English-speaking countries as "golden shower," was reproduced in glass and celluloid

A TEA PLANTATION IN CEYLON
Miniature diorama in Hall 25

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by Mr. Sella and added to the exhibits of leguminous plants in the same hall. This family, with its various types of flowers, is so large and important, and contains so many economic plants, that it deserves to be illustrated even more fully than at present.

Some minor additions, such as fruits of the rose and madder families, were added to the exhibits, but the most important other changes in Hall 29 were effected by an extensive rewriting of labels and the elimination of the black labels, formerly in general use in the Museum.

Considerable progress was made during the year on various exhibits intended for Hall 29, particularly a beginning on the ecological groups which eventually are to occupy the now vacant north and south ends of this hall. With the aid of selected Works Progress Administration workers assigned to the Museum, a large quantity of material was prepared for a group showing North American alpine vegetation, which is to be the first of the series.

DEPARTMENT OF GEOLOGY

EXPEDITIONS AND RESEARCH

Collecting for the Department of Geology was limited to one short expedition to gather specimens for which there was an immediate need. To obtain these Curator Sharat K. Roy spent ten days in Dutchess County, New York, and collected there several series of rocks illustrating the progressive metamorphism of clay through shale, slate, and phyllite to mica schist. These specimens were required in order to fill an important gap in the collections of structural and dynamic geology which are now undergoing complete reorganization and reinstallation in Clarence Buckingham Hall (Hall 35).

By making the collection at this time the material can be placed during the installation now under way, and extensive rearrangement of the exhibit at a later time is thus obviated. The material from Dutchess County is particularly useful because this is the only region known to the geological staff where *all* stages of the progressive metamorphism can be obtained, thus providing a single series, instead of a mosaic composed of several partial series, for exhibition.

Work on reinstallation, and on arrangement and systematization of study and reserve collections, left less time than usual for concentrated research.

The most important works published during the year were two papers by Assistant Curator Bryan Patterson. The first includes a careful study of the structure of the middle ear in the Notoungulata, an order of extinct South American mammals, illustrated with numerous anatomical drawings. These studies have brought out three distinct types of ear-structure which afford new and important bases of classification. The studies were made possible by the large collections of fossil mammals brought to the Museum by the Marshall Field Paleontological Expeditions to South America. The second paper by Mr. Patterson describes a fossil caiman from the Pleistocene formation of South America, and includes a catalogue of South American fossil crocodiles.

An important study of brain casts of fossil mammals of the order Notoungulata was begun, also by Assistant Curator Patterson. This work is facilitated by the large collection of specimens of that order in this Museum, and by the use of an elastic rubberoid material which makes it possible to produce the casts of the brain cavities without destroying the specimens. Comparison of brain casts offers a basis of study very little used in paleontology, but one which has important possibilities in classification.

Continuing studies resulting from his observations during the Second Rawson–MacMillan Subarctic Expedition of Field Museum (1927–28), Curator Roy prepared two short papers, one on the Grinnell Glacier, the other on the history and petrography of Frobisher's "gold ore," a rock which the famous explorer, Sir Martin Frobisher, mistakenly thought contained gold, causing great excitement in the England of his day (sixteenth century). Mr. Roy prepared also a short paper: *Additional Notes on Living Bacteria in Stony Meteorites.*

Dr. Albert Walcott, working in the Department under a special arrangement, continued his studies of the diamonds in matrix which were collected several years ago by Chief Curator of Botany B. E. Dahlgren in Brazil. He identified by optical methods many doubtful specimens uncovered during the rearrangement of the mineral collection.

Under the direction of Chief Curator Henry W. Nichols, sixty-seven Egyptian bronzes were treated in the chemical laboratory to cure a malignant patina which was slowly destroying them. The Fink electrolytic method, and a chemical treatment originated in this laboratory, were both employed. As treatment removes the original patina and leaves the bronzes with a surface less attractive than is desirable, an investigation of methods for restoring non-malignant

patina was undertaken and is now under way. The methods commonly employed for patinating new bronzes, reasonably effective on such material, cannot be safely employed on antique specimens which are always more or less porous and fragile from age, because some of these treatments reintroduce elements of malignant patina, and others are of too drastic a nature.

Several of the bronzes were treated by the method used by the Metropolitan Museum of Art in New York. Although this treatment, which consists of exposing the bronze to certain chemical fumes, is usually successful, it failed on these specimens, as it produced a color and texture resembling that of old wrought iron. This was found to be due to the presence of an excessive amount of sulphur in the metal. Another method now being investigated is more promising.

The still for purifying old and discolored alcohol for re-use on the fish and reptile collections of the Department of Zoology was in operation for eleven months of the year.

Serious corrosion of the degreasing tank used in the Department of Zoology was investigated and a remedy was recommended. The chlorine content of a water supposed to be injurious to the Museum boilers was determined, and a flue-cleaning compound was analyzed.

Numerous partial analyses of minerals for identification and classification were made as usual.

A new petrographic microscope acquired during the year has greatly facilitated routine identification of minerals, since this work is now done by petrographic and microchemical means instead of by the slower method of chemical analysis.

Members of the Department staff contributed ten signed articles and twenty-five unsigned items for *Field Museum News*, and data for seventeen newspaper releases. There were 277 correspondents and 185 visitors referred to the Department for information and the identification of several hundred specimens.

ACCESSIONS—GEOLOGY

The number of accessions recorded during 1936 was forty-seven. The number of specimens included in these accessions is 544. Of these, 348 were gifts, 39 were obtained by exchange, and 157 came from expeditions or were collected by members of the staff. Although the number of accessions is somewhat greater than that recorded last year, it includes less than one-third as many specimens. This is partly accounted for by a more critical attitude toward specimens offered as gifts.

The most important addition to the mineral collection is a large crystal of gem kunzite with a gem cut from its base, presented by Mr. William J. Chalmers, of Chicago. The crystal, weighing seven ounces, is four and one-half inches long and nearly half an inch thick. It is practically free from flaws and defects, and is of gem quality throughout, which is remarkable for so large a crystal. The gem cut from its base weighs twenty-eight carats, is free from flaws and is of good brilliancy.

An attractive addition to the collection of opals in H. N. Higinbotham Hall (Hall 31) is a group of seven Mexican opals which Mrs. Joseph W. Work, of Evanston, Illinois, added to her former generous gifts of gems.

Miss Margaret M. Cornell of the Museum staff presented a baroque pearl attached to the shell on which it grew.

A glass model of the Jonkers diamond, the gift of Mr. Harry Winston, of New York, is a welcome addition to the models of large and famous diamonds in Higinbotham Hall.

Mr. Sharat K. Roy of the Department staff presented an agate showing unusually brilliant fluorescence.

Of special local interest is a group of pyrite crystals, and one of calcite, from the tunnels under the city of Chicago, contributed by a Mr. Roche, who neglected to leave his full name and address.

Other gifts of minerals include twenty-five miscellaneous specimens from Mr. and Mrs. Walter J. Flesch, of Chicago; eleven minerals of North Carolina from Mr. Samuel H. Gilbert, of Chicago, and nineteen crystallized gypsums and six calcite crystals from Mr. O. J. Salo, of Red Lodge, Montana.

One of the most interesting specimens received during the year is a vapor vent obtained by exchange with Mr. E. M. Brigham, of Battle Creek, Michigan. This is a tube which penetrated a lava surface of Kilauea volcano, Hawaii. Through it, steam and hot gases were ejected.

A specimen of friction breccia, the gift of Mr. Bernard Bartnick, of Chicago, illustrates structural features with exceptional clarity.

A welcome addition to the fulgurite or lightning tube collection was the gift of three fulgurites in loam, from Mr. J. O. Beadle, of Marshall, Wisconsin.

A series of manganese-silica concretions from South Dakota, collected and presented by Professor L. A. Higley, of Wheaton, Illinois, is of unusual scientific interest. The curious structure of

curved plates, imperfectly shown in most manganese concretions, is so perfectly developed in these specimens that much may be learned of its nature from intensive study of them. Other concretions were presented by Mr. Albert Walker, of Ontario, Wisconsin. Two specimens, illustrating a phase of travertine not previously well represented in the collections, were received as a gift from Mr. L. E. Hildebrand, of Winnetka, Illinois.

The most important addition to the economic collection was the gift by Mr. H. G. Metcalf, of Auburn, New York, of specimens of the upland diamond-bearing ground of Brazil, one of the few important types of diamond deposit not hitherto represented in the collections. A unique talc specimen, presented by Mr. Dan P. Mumbrue of Helena, Montana, illustrates another type of deposit of which representation was hitherto lacking in the Museum.

Other gifts for the economic collection are a specimen of diabase containing petroleum, from Mr. Charles G. Cowan, of Chicago; six brick shales and briquettes, from the Western Shale Products Company, Fort Scott, Kansas; four specimens of cement rock and two of vermiculite, from the Utica Hydraulic Cement Company, Utica, Illinois, and a specimen of gold ore from Dr. F. A. Thurston, Chicago.

Of greatest scientific interest among additions to the collection of invertebrate fossils is a series, presented by the Chicago Historical Society, of forty fossil insects named by Scudder, and containing twenty-two of his types. Three very perfect fossil fish and eight vertebrate fossils were also included in this gift.

A collection of seventy-five rocks, minerals and fossils, presented by Mr. Henry Field of the Museum staff, includes thirty European invertebrate fossils, many of them of unusual perfection, beauty and rarity. The rocks and minerals included in this gift are of varieties not readily obtained in this country.

A number of coal balls, and large celluloid sections made from them, were obtained by exchange with Professor A. C. Noé, of the University of Chicago. The transparent sections, which illustrate in a striking way the structures and forms of the vegetable detritus from which coal is made, are examples of a recently developed technique which has greatly improved our knowledge of the coal flora.

Twelve fossil leaves from Patagonia were added to the collections through exchange with Mr. E. W. Berry, of Baltimore, Maryland.

Two crustaceans and nine fossil plants were collected by Mr. Bryan Patterson of the Department staff. Other gifts of invertebrate

fossils were a fossil cycad leaf from Mr. G. W. Wharton, of Roseburg, Oregon, and a fossil cephalopod from Mr. Donald Farquhar, Jr., of Chicago.

The most important addition to the collection of vertebrate fossils was a fine mountable skeleton of the strange Miocene ungulate *Moropus*. This was received from the American Museum of Natural History in exchange for a skeleton of *Barylambda*.

Mr. Edwin C. Galbreath, of Ashmore, Illinois, presented thirty specimens of Pleistocene mammals of Illinois, examples of the pre-glacial fauna of this region.

Eight models and casts of Pleistocene vertebrates were obtained from the Los Angeles Museum of Science, History and Art in exchange for similar material from this Museum. This exchange was for the purpose of providing material for study and as an aid in identifying specimens in both institutions. Mr. R. M. Barnes, of Lacon, Illinois, presented a vertebra, the second to be found in this state, which it has not yet been possible to identify. It may belong to some pre-glacial animal hitherto unknown in this region.

CATALOGUING, INVENTORYING, AND LABELING—GEOLOGY

There were 583 new entries in the Department catalogues, which comprise twenty-six volumes. Adding these to previous entries, the total becomes 195,611. The number of specimens catalogued exceeds the number received during the year, as it includes vertebrate material from expeditions of past years, which was not freed from matrix and identified until 1936. Many specimens of vertebrate fossils come to the Museum enclosed by and partly concealed in a stony matrix, so that it is sometimes impossible to determine their number or identify them accurately until the matrix has been chipped away. Also a few unrecorded specimens were found and catalogued during the checking of the study collections which accompanies the preparation of the card catalogues.

Copy for 2,283 specimen labels was prepared and sent to the Division of Printing, and 2,298 labels were received from that Division and installed in the cases. There were 143 labeled prints of photographs added to the Department albums, which now contain 8,528 prints. One hundred and eight United States Geological Survey maps were received, filed and labeled, making the number of these maps now available 4,398.

The cross-indexed card catalogue of photographs has been kept up to date, as has the card index of meteorites. At the beginning of

the year, the meteorite index included cards for only those meteorites added to the collection since 1916, the date of the last printed catalogue of the collection. Cards have now been written for all entries in the printed catalogue as well, thus covering all the meteorite specimens in the Museum. A beginning has been made on an index of all known meteorites not represented in the collection. These are typed on red cards to avoid confusion with the regular catalogue. As the known meteorites not represented number only a few hundred, the writing of this index would be a simple matter were it not that some of the data is widely scattered in the literature.

Work on the card catalogue of minerals has continued. This index is now complete for all exhibited minerals, and substantial progress has been made in cataloguing the reserve collection. During the preparation of this catalogue all specimens were checked, and all doubtful ones were re-identified, a task much greater than listing the minerals and typing the cards. The preparation of the other card catalogues also involved much more work in assembling and correlating data, and checking identifications of specimens, than was required for typing the cards. In all, 7,471 cards were typed, exclusive of those for vertebrate paleontology mentioned later.

Preparation of permanent records of the specimens in vertebrate paleontology was carried on during the greater part of the year. It included preparation of card indexes, records, and a bibliography of South American fossil mammals needed in connection with researches under way based on material collected by the Marshall Field Paleontological Expeditions. During this work, 6,838 specimens were numbered and catalogued, and 1,304 specimen and bibliography cards were written. Forty-five pages of field records were typed for preservation.

Employment of workers assigned by the federal government's Works Progress Administration has been of great benefit to the Department, and much has been accomplished that could not have been attempted without this assistance. They prepared the much needed card catalogue of the meteorite collection, and began the classified catalogue of the mineral collection needed as an aid to future installation and for arrangement of exchanges. They assisted in the preparation of catalogues of the Department photographs and of the vertebrate paleontology collection. Nearly 12,000 catalogue cards were typed by WPA workers during the year. In addition to this, much other needed clerical work was performed. They arranged, cleaned and, where necessary, renumbered and relabeled the reserve

collections on the third floor, handling nearly 23,000 specimens. They have been of material assistance on reinstallation and placing of labels, and their aid has expedited the general work of the preparators. They made two small models for exhibition and helped in the preparation of vertebrate fossils. The number of WPA workers engaged in the Department varied from a minimum of three to a maximum of nine, with a monthly average of seven.

INSTALLATIONS AND REARRANGEMENTS—GEOLOGY

The case labels which formerly projected above the tops of the cases were somewhat unsightly and not sufficiently legible. They have been replaced by framed labels, eighteen inches long and three inches wide, placed inside the cases. Similar labels have been installed also in all cases not previously labeled.

In Hall 34, devoted to minerals and meteorites, the appearance of exhibits in four small cases has been materially improved by replacing with opaque backs the glass backs of the cases which had caused a confused view of objects behind them.

Reinstallation in new cases of the entire meteorite collection, which occupies the west half of Hall 34, was started by emptying three cases and transferring their contents to the workrooms on the third floor where rearrangement for an improved installation is in progress. Otherwise installation in this hall has not been disturbed except for the usual minor adjustments, and additions of a few new specimens.

Plans made in 1935 for the complete reinstallation of Clarence Buckingham Hall (Hall 35) contemplate a number of important changes, upon which work was begun during 1936. The relief maps which occupied more than half the hall are to be removed, because they occupy more space than their interest justifies. The small rock collection formerly in the east end of the hall is to be replaced by a larger and better organized collection which will fill the west end of the hall. The reason for this change is that visitors display more interest in this collection than was believed probable at the time of the original installation. The rest of the space vacated by the removal of relief maps is to be occupied by an exhibit of fluorescent minerals (installed in 1936), and an enlargement of the structural and dynamic collections for which material has been accumulating for years. The appearance of the exhibits is to be improved by removing the shelves and attaching specimens directly to the backs of the cases. This installation not only improves appearance, but

REPRODUCTION OF PURPLE ANGELICA
Hall of Plant Life (Hall 29)
Northeastern North America

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permits a better grouping by which sequences and relations of specimens are made more readily apparent. During reinstallation many minor improvements, such as replacing inferior with better specimens, and revision of labeling, are being made. Work on the reinstallation of this hall has progressed steadily during the year.

The relief maps of most interest have been placed on the walls of the two corridors connecting Hall 35 with adjoining halls, where they show to better advantage. Half of the enlarged collection of rocks filling six cases is now installed in the west end of the hall. When complete this collection will fill twelve cases of the slope-top type, each twelve feet in length. The specimens, which approximate the usual size of three by four inches, are installed on panels parallel with the sloping fronts of the cases. Instead of being mounted on individual blocks as in the old installation, the specimens are attached directly to the panel by invisible clips. For each series of rocks there is a group label explaining them in simple language. The six cases now in place contain an extensive collection of the sedimentary and metamorphic rocks, leaving six cases of igneous rocks yet to be installed.

The reinstallation of structural specimens and those of dynamic origin has proceeded to the extent of five cases. The collection of volcanic material, which formerly occupied two cases, has been enlarged and now occupies three.

A case of specimens and models, illustrating the structure of the earth and features pertaining to its interior, was assembled and installed. It contains the model made last year showing the structure of the earth with its core of metal enveloped with successive shells of rock, each lighter and more acid in composition than the shell below. Another model, illustrating the forms assumed by intrusions of rock from the depths of the earth into overlying rock, was made in the Museum laboratories during the year and is now in position in this case. The rest of the case contains examples of rocks and structures characteristic of such depths as can be reached. A case of travertines and tufas, dendrites, and specimens illustrating rock coloration by weathering, and color banding by segregation of coloring matter, was emptied. After these collections were reorganized and relabeled, the case was reinstalled in accordance with the new plan.

A diorama representing an alpine glacier, modeled in the Department laboratories during the year, was installed in an individual case

against one of the windows and is complete except for a few minor details of coloring.

The most important change in Hall 35 is the addition of a case which promises to be one of the most attractive displays in the Department. It illustrates mineral fluorescence, a property some substances possess of transforming invisible ultra-violet light into visible light of longer wave length. While ordinary minerals are invisible when illuminated by ultra-violet light, fluorescent species glow brilliantly with colors which have no relation to their ordinary colors. In order to obtain the best effects, hundreds of specimens had to be tested before thirty of the most brilliant, representing twelve mineral species, were selected.

As the fluorescent glow, brilliant when seen under proper conditions, is completely masked in daylight by the ordinary color of the mineral, the design of a case in which the fluorescence could be seen under favorable conditions in a dim light was a matter of some difficulty. The specimens have been installed on a vertical panel, four feet high and five and one-half feet long, on the back of a case three feet deep. The panel and interior of the case are black. Access of daylight from the front is impeded by a screen so placed that there is a passage three and a half feet wide between screen and case, from which the fluorescence can be observed. Entrance of light into the passage is further obstructed by wings attached to the screen at the entrance and exit. The specimens are provided with labels lettered with fluorescent paint. The minerals are illuminated by ultra-violet light from a nico lamp at the top. An illumination of forty-five seconds in each minute by ultra-violet light is followed by fifteen seconds of illumination by ordinary artificial light. The change of illumination is controlled by an automatic switch. The abrupt change from the brilliant blue and green, and less brilliant red and yellow, fluorescent glow to ordinary dull and commonplace color as the illumination changes is impressive.

Eight colored transparencies of typical and well-known volcanoes were installed in windows adjacent to the volcanic exhibit. The colored transparencies formerly installed in a window adjacent to the exhibit of cave formations have been replaced by six views of superior quality representing scenes in the Carlsbad Caverns of New Mexico. Other rearrangements in this hall were confined to minor adjustments and changes of individual specimens.

Installations in Hall 36 and in Frederick J. V. Skiff Hall (Hall 37) were limited to minor readjustments and additions of specimens.

In Ernest R. Graham Hall (Hall 38) the most conspicuous change is the addition of a group of "tar bed" fossils from the asphalt springs near Los Angeles. This group, which occupies a floor space of eleven by fourteen feet, represents a portion of the surface of an asphalt spring in which many animals were trapped and mired. Mounted skeletons of the ground sloth, saber-tooth tiger, fossil horse and fossil bison are placed upon this surface in life-like poses. They exemplify a few of the larger of the numerous animals whose fossil remains have been found in this spring. A skeleton of the large armored mammal, *Eleutherocercus*, from South America, mounted in three-quarter relief and accompanied by a miniature restoration of the animal as it appeared in life, fills a whole case.

A skull of the fossil baleen whale, *Agalocetus;* a carapace of a Pliocene glyptodont, *Plohophorus*, and a mounted skeleton of the great Pliocene turtle, *Testudo*, were removed from upright cases and installed in individual cases built for them. A collection of fossil cones, branches and sections of trunks of South American araucaria trees, with cones and foliage of a related modern tree, was installed in half of a slope-top case. Considerable rearrangement of collections and of the position of cases in the north end of the hall was necessary to make room for these additions.

A unique skeleton of the rare and hitherto little-known ungulate *Homalodotherium*, from the Miocene of Argentina, was mounted in full relief and installed to occupy an entire case.

In other parts of the hall only minor changes, such as elimination of duplicates and replacement of inferior specimens, were undertaken.

Besides the preparation of vertebrate fossils finished and placed on exhibition during the year, two nearly complete skeletons and three additional skulls of a remarkable Pliocene bird from South America were removed from the matrix and prepared for the study which must precede mounting them for exhibition.

Work on rearrangement and classification of study and reserve collections on the third floor has continued through the year. All reserve and study collections of minerals, including structural, dynamic and economic specimens in Room 113 (except the lithologic collection) are now substantially in order, although the repainting of faded numbers, replacing of defective labels, and some other details are far from complete. The value of a well-arranged reserve collection has been amply demonstrated during the year.

During the reinstallation of exhibits on the second floor, it has been possible to compare reserve with exhibited specimens and, by

interchanges, to improve materially the appearance of the exhibits. Visitors whose problems call for examination of specimens not on exhibition are now assisted in their studies with greater benefit to them and the expenditure of less time. The reserve collections of invertebrate paleontology in Room 111 are of a character which will require much more labor to achieve a similar rearrangement. The specimens are more numerous, they require more cleaning, and checking them against the records requires more time. Although nearly 15,000 specimens have been cleaned, reclassified, and systematized, it is anticipated that several more years of work will be required before this task is completed.

DEPARTMENT OF ZOOLOGY

EXPEDITIONS AND RESEARCH

Expeditionary work for the Department of Zoology was at a minimum during 1936, and no field work of a regularly organized nature was conducted.

Through cooperation with the Chicago Zoological Society, the services of Mr. Harold C. Hanson, a volunteer worker in the Department, were utilized to obtain an interesting collection of birds, mainly from northeastern Greenland. Mr. Hanson was associated for this purpose with the expedition of Captain Robert A. Bartlett, which had as its primary object the capture of specimens of live musk-oxen for the Zoological Society. Field Museum's participation in this expedition was made possible by the Emily Crane Chadbourne Fund.

Through the generosity of Mr. Sasha Siemel, of New York, who spent several months on a hunting trip in South America, the Museum secured a baby tapir specimen which he collected. This will be used to augment and complete the Museum's group of tapirs in the Hall of American Mammal Habitat Groups (Hall 16).

Mrs. Oscar Straus, of New York, in the course of a visit to Australia and New Zealand, kindly made arrangements whereby it is expected the Museum will obtain certain rare birds needed for proposed habitat groups in the Hall of Birds (Hall 20).

Fifteen zoological publications, embodying the results of research by members of the Department staff, and other scientists as well, were issued by Field Museum Press during the year, as follows: *Fishes of the Crane Pacific Expedition*, by Dr. Albert W. Herre, of Stanford University; *African Reptiles and Amphibians in Field*

Museum of Natural History, by Arthur Loveridge, of the Museum of Comparative Zoology, Harvard University; *Records and Measurements of Neotropical Bats*, and *Descriptions and Records of African Bats*, both by Curator Colin C. Sanborn; Part IX, *Catalogue of Birds of the Americas*, by Associate Curator Charles E. Hellmayr; *Secondary Sex Characters of Chinese Frogs and Toads*, by Ch'eng-Chao Liu, of Soochow University, Soochow, China; *The Distribution of Bidder's Organ in the Bufonidae*, and *Courtship and Mating Behavior in Snakes*, both by Assistant Curator D. Dwight Davis; *Clearing and Staining Skeletons of Small Vertebrates* (Museum Technique Series), by Assistant Curator Davis and U. R. Gore; *Notes on Bahaman Reptiles and Amphibians, Guatemalan Salamanders of the Genus Oedipus, Preliminary Account of Coral Snakes of South America*, and *Notes on Central American and Mexican Coral Snakes*, all four by Curator Karl P. Schmidt; *Notes on Snakes from Yucatan*, by Curator Schmidt and E. Wyllys Andrews; and *New and Imperfectly Known Small Mammals from Africa*, by Chief Curator Wilfred H. Osgood.

Publications by staff members which appeared under other than Field Museum auspices include the following: "Robert Kennicott, Founder of Museums," by Karl P. Schmidt, *Program of Activities—Chicago Academy of Sciences*, Vol. 7, pp. 3–8; "New Amphibians and Reptiles from Honduras in the Museum of Comparative Zoology," by Karl P. Schmidt, *Proceedings of the Biological Society of Washington*, Vol. 49, pp. 43–50; "Zoogeographica" (review), by Karl P. Schmidt, *American Naturalist*, Vol. 70, pp. 264–266; "The Amphibians of the Pulitzer Angola Expedition," by Karl P. Schmidt, *Annals of the Carnegie Museum*, Vol. 25, pp. 127–133; "A Key to the Lizards of the United States and Canada" (review of a paper by Charles E. Burt), by Karl P. Schmidt, *Copeia*, 1936, pp. 127–129; "Notes on Brazilian Amphisbaenians," by Karl P. Schmidt, *Herpetologica*, Vol. 1, pp. 28–30, pl. 3; *Artist and Naturalist in Ethiopia*, a book by Wilfred H. Osgood and Louis A. Fuertes, with illustrations by the latter, Doubleday, Doran and Company, New York; "A Second Record of the White-eyed Vireo in Guatemala," by Emmet R. Blake, *The Auk*, Vol. 53, p. 219, April, 1936; "Additional Records of Neomorphus radiolosus," by Emmet R. Blake, *The Auk*, Vol. 53, p. 447, October, 1936; "The Terminology of Reptilian Musculature," by D. Dwight Davis, *Herpetologica*, Vol. 1, pp. 12–17, 1936; and "Reducing the Injurious Effects of Formaldehyde in the Museum," by Alfred C. Weed, *Museum News*, Vol. 14, No. 2, pp. 7–8, May 15, 1936.

Contributions of the zoological staff to *Field Museum News* comprised thirteen signed articles and twenty-six brief notes. Data were furnished for thirty-three newspaper releases.

Research on African mammals obtained by various expeditions during the last ten years was continued by Chief Curator Osgood, and preliminary studies were completed with the publication of descriptions of eighteen new forms.

Curator Colin C. Sanborn continued preparation of a special study of the American bats of the family Emballonuridae. Considerable progress was made in compiling the index to the literature pertaining to bats.

Associate Curator Charles E. Hellmayr, working in Vienna, continued with the preparation of the final volumes of the *Catalogue of the Birds of the Americas*, which are to include the birds of prey, the game birds, and the water birds. Research Associate H. B. Conover was actively engaged in assisting Dr. Hellmayr with the volume which will cover game birds. So far as routine duties permitted, Curator Rudyerd Boulton and Assistant Curator Emmet R. Blake engaged in the identification of African and South American birds. Messrs. Harold Hanson and Sidney Camras, volunteer workers, proceeded with the identification of birds from Greenland and from the South Sea islands.

Research in the Division of Reptiles centered on the collections from southwestern Asia, which have been further increased due to the interest of Mr. Henry Field of the Department of Anthropology, and on the Guatemalan and other Central American collections made by Curator Karl P. Schmidt in 1934. The study of the local fauna was continued, and the fall aggregation of blue racers in the Indiana Dunes was again observed. Two studies on the American coral snakes were completed and results published. Reptiles and amphibians collected by Mr. L. C. Cole in Utah and Arizona were identified in the Division with the aid of Curator Schmidt, the greater part of the collection being presented to the Museum.

The mating behavior of snakes was investigated by Assistant Curator D. Dwight Davis. Existing literature on this subject was compiled and analyzed in conjunction with original observations yielding certain novel conclusions as to the relation between the mating behavior of snakes and that of other animals.

Preliminary studies were made on adaptive radiation and convergence in the skulls of snakes. These studies were based on the

Museum's notable collection of specimens. Further study of this collection promises to yield much new and valuable information.

Curator Alfred C. Weed continued work on fishes collected in Fiji by an expedition of the John G. Shedd Aquarium, and on new and interesting fishes collected in the Near East by Mr. Henry Field and others. Preparation of manuscripts for publication has been much delayed by the pressure of routine work. A study of Atlantic sea bass of the genus *Centropristes* also was made, and results will soon be ready for printing.

Many undetermined butterflies and moths in the Museum's collection were properly classified by Dr. E. Murray-Aaron, a competent entomologist employed through the federal Works Progress Administration. In connection with this work 6,393 specimens of lepidopterous insects were studied, 150 name labels were written, 792 previously unnamed species were identified, 1,270 generic and specific names were changed, and 2,043 name labels were supplied with bibliographic notations.

ACCESSIONS—ZOOLOGY

Total accessions for the year amount to 11,481 specimens, of which some 4,000 are insects. The more important specimens of vertebrates were received as gifts and exchanges, material from expeditions or from purchases being relatively scanty. Accessions are classified by zoological groups as follows: mammals, 2,258; birds, 846; amphibians and reptiles, 3,003; fishes, 580; insects, 4,145; lower invertebrates, 649. The number received from Museum expeditions is 3,196; gifts, 5,399; exchanges, 868; purchases, 2,018.

Of particular value among gifts of mammals was a complete specimen of a markhor from Messrs. John M. Simpson and A. Watson Armour III, of Chicago. The Oriental Institute of the University of Chicago presented two wild boars from Syria. Mr. Sasha Siemel, of New York, collected and presented a young Brazilian tapir which will be placed with the adults of the same species in the Museum's group in Hall 16. Dr. J. F. W. Pearson, of the University of Miami, Coral Gables, Florida, collected and presented a collection of 142 bats from Long Island, Bahamas.

Chief Curator Wilfred H. Osgood gave a series of forty-four Ontario mammals collected by himself. Mr. George K. Cherrie, of Newfane, Vermont, sent a collection of twenty-nine small mammals from Texas. Mr. Henry Field, of the Department of Anthropology, added forty specimens from Iraq to his many other gifts from that

country. Mr. H. E. Perkins, of Huron Mountain, Michigan, secured a bobcat for the Museum. Mrs. John Hinaus, of Bruce, Wisconsin, presented an albino bat, the first ever received by the Museum.

The John G. Shedd Aquarium, the Chicago Zoological Society, and the Lincoln Park Zoo presented the Museum with a total of thirty-seven mammals. Most important are a Brazilian manatee from the Shedd Aquarium; a binturong, two gibbons and six kangaroos from the Chicago Zoological Society; a giant ant-eater, zebra, three orang utans and one chimpanzee from the Lincoln Park Zoo. A young chimpanzee was received from Mr. Henry Trefflich, of New York, through the Chicago Zoological Society.

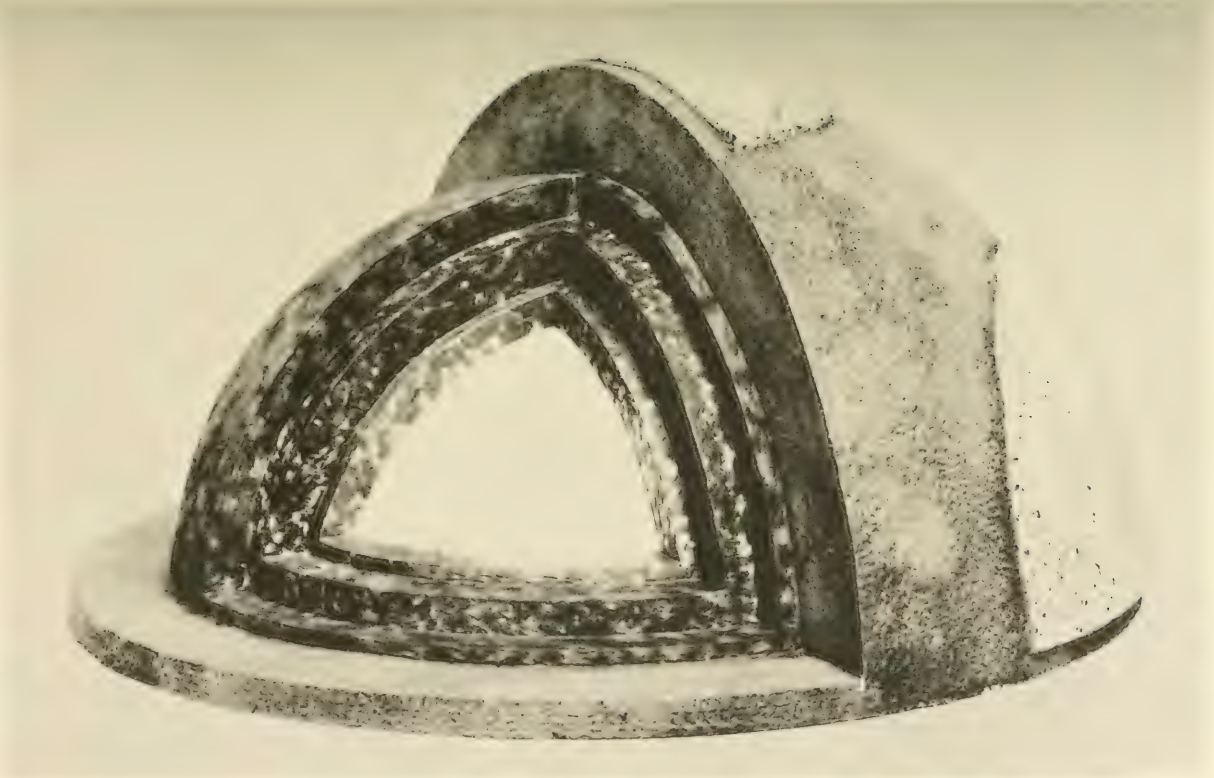
In the Division of Birds, seventy-six gifts from thirty-eight individuals (compared with sixty-six gifts from twenty-seven individuals for 1935), totaling 497 specimens, indicate continued increase in the interest and cooperation of local naturalists.

As in 1935, the most important gifts of birds were those of Mr. Leslie Wheeler and the Chicago Zoological Society. Mr. Wheeler, who is both a Trustee and a Research Associate of the Museum, presented 180 specimens, mostly of hawks and owls, adding many new species and races to the large list of those already represented in the collection, as well as amplifying previously acquired series.

Among 188 birds presented by the Chicago Zoological Society are 127 from northeast Greenland, collected on the Bartlett expedition as noted elsewhere. The remainder are specimens that died during the course of the year in the Society's zoo at Brookfield. Many of these were very rare and valuable, especially for preparation of skeletons and anatomical specimens.

Among other important gifts of birds received during the year were those from Research Associate H. B. Conover, Mr. Henry Field, Mr. A. J. Franzen, of the Department of the N. W. Harris Public School Extension, Major R. D. Hildebrand, of Washington, D.C., Mr. J. Andrews King, of Lake Forest, Illinois, and Mr. Karl Plath, of Chicago.

The most notable gifts of reptiles and amphibians were 273 specimens from Florida, England and Iraq, presented by Mr. Henry Field, and forty specimens from Syria, presented by the Oriental Institute of the University of Chicago. From Mr. Lamont C. Cole, of Chicago, 333 specimens representing Utah and Arizona varieties were received. Forty-five specimens from Panama and Costa Rica were presented by Dr. Emmett R. Dunn, of Haverford, Pennsylvania; forty-nine specimens from Ecuador were received



MODEL ILLUSTRATING STRUCTURE OF THE EARTH

Clarence Buckingham Hall (Hall 35)

Shown are concentric layers of rocks, increasing in weight towards the center, which is a core of metal

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from Mr. R. W. Chadwick, of Chicago; 115 specimens from the Bahamas were presented by the Museum of Comparative Zoology, of Harvard University; five specimens came from the Lincoln Park Zoo, and fifty specimens from the Chicago Zoological Society. Several of these were used in preparation of exhibition models.

Many valuable fishes were received as gifts from various sources. An unusually large number of these filled specific needs because the donors had been advised just what would be most desirable.

Gifts of fishes from Mr. Henry Field include a collection containing some new species from the rivers Tigris and Diala, Iraq. Other gifts from Mr. Field include valuable specimens from the west coast of Florida, and a series of the commoner fishes of northeastern Scotland. Many of the species of this latter collection were not previously represented in our study series. To Mr. Field's interest is due also the gift of a collection of specimens from the Tigris and Euphrates rivers, sent by Professor W. P. Kennedy, of the Royal College of Medicine, Bagdad, Iraq.

The John G. Shedd Aquarium has continued to cooperate with the Museum by furnishing many rare specimens for the study collections, as well as valuable information for the taxidermists.

Professor H. W. Norris, of Grinnell College, Grinnell, Iowa, added some very interesting material to the series of jaws and skin samples of the sharks he has been studying. At the request of the Museum, Mr. Fred Ladd, of Wakulla, Florida, forwarded seven very excellent specimens of sea bass from the Gulf of Mexico.

The Chicago Zoological Society gave a small collection of shore fishes of Newfoundland, collected by Mr. Harold C. Hanson while on the Greenland Expedition of 1936. Mr. Robert Zimmerman, of Chicago, presented a small series of the interesting fishes of the reefs and sand flats of Andros Island, Bahamas.

Mr. Emil F. Vacin, of Oak Park, Illinois, added to the collection of game fishes, especially trout, as in previous years, and gave some fine specimens showing the variation of fishes planted in a new locality. Mr. Alfred C. Weed, Jr., of Chicago, gave two specimens collected on the west coast of Africa. One of these represented a genus not previously in the study collection.

Much valuable osteological material to fill conspicuous gaps in the collections was received through the cooperation of the Chicago Zoological Society and the Lincoln Park Zoo.

A large number of donors contributed to the collection of insects. Among the larger gifts was a series of 945 specimens pre-

sented by Mr. Henry Field, representing well known but much needed species of England, Scotland and Wales. Mr. Gordon Grant, of Los Angeles, California, gave a collection of 643 insects. Mr. Field gave also 144 lower invertebrates from Great Britain, and Mr. Grant 307 from western North America.

One of the most important exchanges of the year was with the United States National Museum, Washington, D.C., from which Field Museum received 185 bats, adding new genera and many new forms to the collection. Forty specimens of African and South American mammals were received in exchange from the Museum of Comparative Zoology, of Harvard University. By other exchanges, thirty specimens were received from Japan and eleven from West Africa.

Twelve exchanges of birds were effected with eight other institutions and individuals. Although only forty-eight specimens were thus acquired, there were twenty genera, eight species and eight geographical races not hitherto represented in Field Museum's collections.

Exchanges of reptiles and amphibians resulted in the acquisition of 545 specimens. Most of these came from the British Museum; from Dr. Charles E. Burt, of Winfield, Kansas; and from Dr. J. F. W. Pearson, of Miami, Florida. Exchange of fishes was confined to that of one valuable specimen received from the Muséum d'Histoire Naturelle, of Paris. The most important purchase of the year was a general collection from western China, obtained by Mr. Floyd T. Smith. This included 1,581 mammals, 299 birds, 405 amphibians and reptiles, and 72 fishes. Other purchases include two fine clouded leopards from northern India and forty-one miscellaneous mammals from Ecuador.

Material from expeditions was sparse, and largely confined to specimens collected in previous years but for various reasons not incorporated in the collections at the time of receipt. As mentioned elsewhere, a small but valuable collection was made by Mr. Harold C. Hanson, a volunteer assistant in the Division of Birds, who was enabled to accompany an expedition to Greenland with Captain Robert A. Bartlett under the auspices of the Chicago Zoological Society. Mr. Hanson's collections include 127 beautifully prepared birdskins, as well as skeletons, anatomical material, and birds' stomachs for use in the study of food habits.

As part of Field Museum's share of the collections of the Vernay–Lang Kalahari Expedition (1930) there was received, in 1936, a

series of named South African fishes numbering 126 specimens forwarded by the Transvaal Museum of Pretoria, South Africa.

CATALOGUING, INVENTORYING, AND LABELING—ZOOLOGY

The number of zoological specimens catalogued was 8,473. They are divided by subjects as follows: mammals, 743; birds and birds' eggs, 4,212; reptiles and amphibians, 2,599; and fishes, 919. About 24,000 small mammal skins were cleaned and degreased with benzine. Some 600 cards were added to the reference index of new forms of mammals. To the card index of the mammal collection, 500 cards were added and 1,500 cards were corrected and rewritten. Old-style skull vials were replaced and new labels written for them to the number of 3,400. Other skulls numbered and labeled amounted to 1,086. All original mammal labels not attached to specimens were numbered and filed consecutively in small envelopes. New labels were written for about 200 drawers, and for about 150 alcohol bottles. Thirty-three exhibition labels were written.

Work was begun on a survey of the Museum's collection of pamphlets dealing with mammals so that missing papers can be secured and pamphlets bound. Work was also started on sorting and labeling the collection of photographs of mammals.

In the Division of Birds unusual activity prevailed, and much progress was made in the arrangement of specimens and the perfection of records and adjuncts to their efficient utilization.

Specimens of birds belonging to fifty families were properly arranged so that individual specimens can be readily found, and space was allowed for expansion of the collection. This makes a total of seventy-two families now in good condition, slightly less than half the collection. Specimens from the New World, to the number of 11,730, were carded, making forty-four families now complete. Added to those of last year, this gives a total of 14,895 specimens carded. A geographic card index file of all these specimens was also completed.

Typewritten labels to replace old illegible labels were prepared for 14,895 specimens. Identifications were lettered in pencil on 13,961 of them, and 9,000 labels were sewed to the original labels and tied on the specimens. This work was made possible largely by a special typewriter, equipped with very small type, presented by Trustee Leslie Wheeler.

About one hundred large trays for storage cases were rebuilt, and the lining of trays with sheet cotton was continued, the number lined during the year being 1,497, which brings the total to 2,373. More than 200 especially valuable study skins of birds were degreased and repaired, most of them being entirely remade. A file of all birds permanently removed from the collection by exchange, sale, or otherwise, was prepared, totaling 1,383 entries.

Much checking of identifications of study skins of birds was accomplished, including identifications of two-thirds (about 2,000) of the specimens in the Coale Collection received in 1935; the checking, cataloguing and distributing of all non-passerine birds of the Ethiopian collection, and the identification and partial cataloguing of the Cornelius Crane Pacific collection.

Among the bibliographic enterprises completed in the Division of Birds are the following: compilation of 9,495 author titles of New World birds complete from 1900 to 1934; compilation of all (728) New World birds described as new up to 1934, since the publication of the various volumes of the *Catalogue of the Birds of the Americas;* refiling and recarding of the Museum's collection of pamphlets on birds (997 titles to date); compilation of all (104) birds described as new since the publication of Peters's *Birds of the World;* compilation of all (529) African birds described as new since the publication of Sclater's *Systema avium Ethiopicarum.*

Six maps (18″x24″) of Field Museum's zoological expeditions were made on appropriate projections showing routes, dates, and collecting stations. Projections were calculated and four large (30″x40″) wall maps of the New World and Africa were constructed on which were plotted the localities of birds in Field Museum's collections. Seven maps for transparent exhibition labels were made, and three outline maps were drawn for photogravure reproductions to be used in plotting data and for publication.

The Museum's collection of birds' eggs was unpacked, preparatory to final arrangement. One hundred and ninety-seven miscellaneous sets were catalogued, carded, labeled and arranged in new pasteboard trays, 385 sets were identified and arranged in new pasteboard trays, and 2,026 sets of the Barnes American collection were catalogued.

A mounted and bound atlas of all available sheets of the American Geographical Society's *Millionth Map of Hispanic America* was presented to the Division by Trustee Leslie Wheeler, Research Associate H. B. Conover, and Curator Rudyerd Boulton. Four

map frames for holding the reference maps being drawn in the Division were acquired.

Cataloguing of reptiles and amphibians was kept up to date. The number of entries for the year is 2,599, including 106 for osteological material. Forty exhibition labels for lizards were rewritten to conform with others in Albert W. Harris Hall (Hall 18), and a small map indicating distribution was added for each species. Further progress has been made in labeling, made necessary by the rearrangement of the study collection which has been begun in the new steel cases on the fourth floor. Printed labels are now in preparation for both cases and drawers containing the main collection in Room 88.

Facilities for the storage of study collections of reptiles and amphibians have been improved by the addition of twenty-six steel cases on the fourth floor. This has made possible the elimination of the unsightly and bulky tanks in Room 88. These are now enclosed in cases, into which they are raised by a simple but ingenious carrier. Space gained in Room 88 is used for additional storage cases and for much needed expansion of the study tables.

Considerable progress has been made in the work of separating specimens of fish remaining in large containers, which often were very poorly labeled, and in which they could be found for study purposes only after long and laborious search. Work so far accomplished encourages the hope that, by the end of another year, practically all material in the study series may be so arranged that any desired specimen can be located within a few minutes. During the year 1,221 gallons of used alcohol were taken to the still. Reclaimed alcohol to the amount of 980 gallons at an average strength of 77 per cent was received, equivalent to 1,091 gallons at 69 per cent for return to the specimens.

Steel doors were added to the stacks set apart for the types of fishes and other valuable material in the study collection. Practically all of these valuable specimens have now been separated from the general collection, and placed where they will not be injured by the effects of light and where they can receive careful attention.

The bibliographic project in the Division of Fishes was advanced by the indexing of seventeen bound volumes of short ichthyological papers.

Osteological material was catalogued under divisional subjects and also by card index in the Division of Osteology and Anatomy, the number of entries being 444. Of these, 49 were mammals, 289

birds, and 106 amphibians and reptiles. Many desirable alcoholic specimens were transferred from other divisions and prepared as skeletons. Total accumulations of the year in osteology are 635 specimens, bringing the total collections to 2,289, an increase over 1935 of more than 34 per cent.

With the cleaning of 1,111 mammal skulls, preparation of this type of material was brought up to date for the first time in the history of the Museum. This made possible a concerted attack on the accumulation of skeletons, most of which require cleaning by hand. A record total of 875 osteological specimens, in addition to mammal skulls, was prepared during the year. In order to accommodate this material, considerable rearrangement and expansion were necessary. Much additional storage space was obtained, and the flexibility of the collections was greatly increased by cutting down deep drawers to make 150 three-inch trays for storage of small specimens. Labels were printed for all storage cases.

An outstanding accomplishment of the year was the preparation of a comprehensive collection of nearly 400 snake skulls. These were removed from alcoholic specimens without serious damage to the latter, and cleaned. This is the only extensive collection of snake skulls in the United States, and promises to yield much valuable information. The bodies of two mammals and seven reptiles were embalmed and added to the series of vertebrate types preserved for study of soft anatomy. A much needed book-case was installed in the office of the Division.

No insects were catalogued, but, as in the past, all accessions were recorded and indexed according to locality, donor and collector. For the installation of eight cases of lower invertebrates, thirty-six descriptive labels were prepared, and 777 name labels were verified and changed, when necessary, to conform to recent classifications. In continuation of the arrangement of the several collections of North American beetles, 2,749 specimens, requiring 405 species labels, were determined, largely repinned, and placed in fourteen new drawers.

Student-assistants provided volunteer service in the Department as in former years. In the Division of Birds, Mr. Harold Hanson, Mr. Sidney Camras, and Mr. William Beecher have furnished valuable aid. Mr. Walter Necker continued from time to time as a volunteer in the Division of Amphibians and Reptiles. Mr. Chester Roys assisted in the preparation of insects and in the installation of lower invertebrates.

The assistance of workers provided by the federal Works Progress Administration was of very great advantage throughout the Department. The type of work done by such workers was much the same as in 1935, but due to continuity of employment and better training, as well as to the larger number engaged, very much more was accomplished.

INSTALLATIONS AND REARRANGEMENTS—ZOOLOGY

Although the preparation of large mammal groups proceeded at the usual rate, only one group was fully completed. Several others were in advanced stages at the end of the year, including groups of harbor seal for the Hall of Marine Mammals (Hall N), and of Asiatic takin for William V. Kelley Hall (Hall 17). A group of Colobus or guereza monkeys from Ethiopia also was nearing completion for exhibition in Carl E. Akeley Memorial Hall (Hall 22).

The group of Bengal tiger, installed in Kelley Hall in 1934, was improved by alteration. The male tiger was remounted and placed in a slightly different position. Although the change is not great, it is in the direction of a less tense and dramatic position for the animal, giving it better conformity with the subjects of other groups in the hall. The male tiger now stands over its kill merely snarling and defiant, while the female stands at one side, half-crouched and ready to slink away.

The one finished group of large mammals is that of the white-tailed gnu or black wildebeest of South Africa, installed in Akeley Hall. This includes six specimens—males, females, and young—rather closely aggregated in conformity with the highly gregarious habits of the species. The setting is that of open plains such as those where the species once roamed in great herds but where, for the most part, it is now extirpated. The group is perhaps the only one of this species in existence, for as a truly wild animal the species is exceedingly scarce, being preserved mainly on private lands where natural conditions are still available. The specimens for this group were received through the generosity of Mr. Arthur S. Vernay, having been collected by the Vernay–Lang Kalahari Expedition (1930). The taxidermy is by Staff Taxidermist C. J. Albrecht.

Further additions to Akeley Hall were made by reinstallation of a hippopotamus and a white rhinoceros in special cases with natural groundwork.

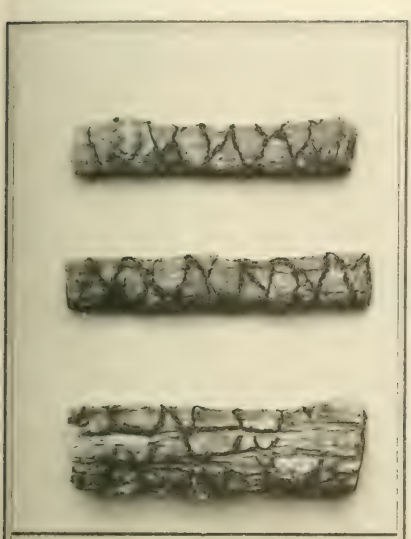
Various important additions were made to the systematic exhibit of horned and hoofed mammals in George M. Pullman Hall (Hall 13).

In one case, two forms of wild oxen were installed—the Philippine tamarao, and the banting of southeastern Asia. The tamarao, a sort of dwarf buffalo, known only from Mindoro Island and probably nearing extinction, was collected and presented by Mr. A. W. Exline, a resident of the Philippines. The banting, a very fine, richly colored specimen, was collected by the William V. Kelley–Roosevelts Asiatic Expedition (1928). Both of these wild oxen were mounted by Staff Taxidermist Julius Friesser. Further additions to Pullman Hall include a blue sheep shot by Colonel Theodore Roosevelt in western China, a four-horned antelope shot by the late Colonel J. C. Faunthorpe in India, and an Ethiopian ibex obtained by the Field Museum–*Chicago Daily News* Ethiopian Expedition. These were mounted by Assistant Taxidermist W. E. Eigsti.

In Hall 15 one case of marsupials was reinstalled with important additions and substitutions, also prepared by Mr. Eigsti. The new animals shown are the red kangaroo, Matchie's tree kangaroo, the Australian native cat or dasyure, and the spotted cuscus of New Guinea. The last of these was collected by the Cornelius Crane Pacific Expedition (1928–29), and the others were presented by the Chicago Zoological Society.

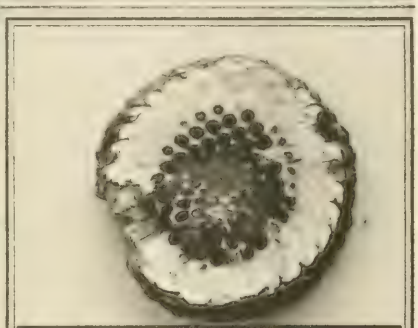
Much progress was made in Hall 20, where a series of habitat groups of foreign birds is under way. The emperor penguin group from "Little America" was completed and opened for exhibition. Eight specimens of this, the largest of penguins, collected by Rear Admiral Richard E. Byrd, on his Second Antarctic Expedition (1935) and presented to the Museum by the Chicago Zoological Society, are shown on the Ross Ice Shelf with the Barrier Reef of ice in the background. A small party of penguins is seen in the rear, hastening from open water some miles in the distance to join the group in the foreground. A sky filled with snow clouds adds to the impression of extreme cold. The specimens were mounted and installed by Staff Taxidermist John W. Moyer. The background was painted by Staff Artist Charles A. Corwin and Staff Taxidermist Arthur G. Rueckert.

Three other groups in Hall 20 were practically completed, in preparation for opening early in 1937. These are the Mount Cameroon forest group, the weaver-bird group, and the Kalahari Desert group. The specimens for the Mount Cameroon group were collected by Curator Rudyerd Boulton and Mrs. Boulton on the Straus West African Expedition (1934), and were presented to the Museum by Mrs. Oscar Straus, of New York. The group

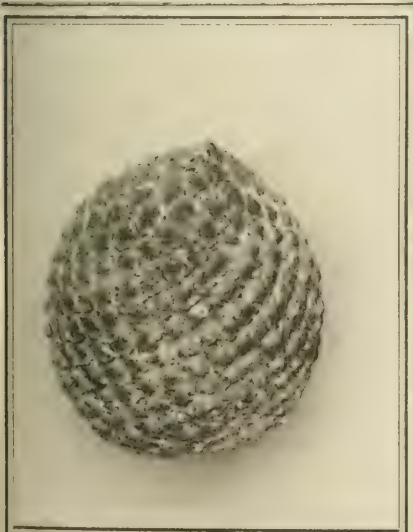


P 14014, 14015
Leafscarred Branches
Proaraucaria species
Cerro Cuadrado Fossil Forest
Province of Santa Cruz, Argentina

P 13949
Fossil Cone (Carpellate)
Proaraucaria patagonica Wiel.
(Type Specimen)
Cerro Cuadrado Fossil Forest
Province of Santa Cruz, Argentina



P 13869
Fossil Cone, Sectioned Obliquely
Proaraucaria mirabilis (Speg.) Wiel.
Cerro Cuadrado Fossil Forest
Province of Santa Cruz, Argentina



P 13823
Fossil Cone Entire (Carpellate)
Proaraucaria mirabilis (Speg.) Wiel.
Cerro Cuadrado Fossil Forest
Province of Santa Cruz, Argentina

P 13812
Fossil Cone (Carpellate)
Proaraucaria mirabilis (Speg.) Wiel.
Cerro Cuadrado Fossil Forest
Province of Santa Cruz, Argentina

FOSSIL CONES AND TWIGS

Ernest R. Graham Hall (Hall 38)

Specimens from evergreen trees related to the *Araucaria* of Australia and South America

Collected by the Marshall Field Paleontological Expedition
in the Cerro Cuadrado fossil forest of Argentina

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shows the junction of the lowland rain forest and the mountain rain forest at an altitude of 5,000 feet on the slope of Mount Cameroon in West Africa. The peak of the mountain, 13,353 feet high, is just discernible in the background. A flock of six plantain eaters is feeding on the fruit of a wild fig tree. Thrushes and fruit pigeons have also gathered to the feast. The disturbance has attracted several other species. Six species of birds found only on Mount Cameroon, and three other species widespread in West African forests, are shown. Twenty-seven species of plants, all collected on the mountain, are included in the group, helping to give the effect of tangled luxuriance. Three species of butterflies and the Goliath beetle are also shown. Rain drops on the leaves of the *Dracaena* and fig, and heavy, low-lying mist, help to create the illusion of excessive humidity in a place where the normal rainfall is more than forty feet in a year. The birds were mounted by Taxidermist Rueckert, and the vegetation was made under the direction of Preparator Frank Letl. The background was painted by Messrs. Corwin and Rueckert.

The weaver-bird specimens also were collected by Mr. and Mrs. Boulton on the Straus Expedition, and presented by Mrs. Straus. The group shows a nesting colony of village weaver-birds in a gully on the bank of the Niger River at Niamey in French West Africa. Ten or fifteen nests in various stages of construction are shown in an abellia tree, closely related to the acacias and popularly called "woman's tongue tree," because the loose seeds in its large pods are constantly rattling in the wind. In the background, on the bank of the river, is a native village. About twenty birds in their bright orange, black, and yellow livery are seen at their nests engaged in various activities. The birds were mounted by Taxidermist Moyer, the accessories were made under the direction of Mr. Letl, and the background was painted by Mr. Corwin.

The Kalahari Desert group was virtually completed. The specimens were collected by the Vernay–Lang Kalahari Expedition (1930), and presented by Mr. Arthur S. Vernay, of New York and London. Gomodimo Pan, a waterhole in the semi-desert, is shown in the background, and to it flocks of yellow-throated sand-grouse are coming to drink. In the foreground, a small flock of sand-grouse have alighted. Two white-quilled bustards are stalking a lizard, while a double-banded courser scuttles out of the way. A pair of scarlet-breasted shrikes observe the commotion from their vantage point in a red aloe. In the background a giant bustard displays

before his mate, and a bateleur eagle soars overhead. The birds were mounted by Taxidermist Rueckert, the accessories were prepared under the direction of Mr. Letl, and the background was painted by Messrs. Corwin and Rueckert.

In all the aforementioned groups, the accessories were made with the assistance of Works Progress Administration workers, whose services amounted to several thousand hours.

Four other habitat groups for Hall 20—those of toucan, quetzal and oropendula collected by the Leon Mandel Guatemala Expedition (1933–34), and the red grouse collected by Mr. Henry Field —are in various stages of preparation.

In Hall 21, additions to the systematic exhibit of birds were relatively few. Notable were several species of penguins to complete a synoptic exhibit of the group to which they belong. An important substitution was that of a fine African ostrich for a specimen mounted many years ago. The new specimen was prepared by Staff Taxidermist Leon L. Walters, and Assistant Taxidermist Edgar G. Laybourne. The head, neck, legs, and feet are reproduced by the "celluloid" process invented by Mr. Walters, which is particularly suitable to a bird of this kind having extensive naked or nearly naked and delicately colored parts.

Rearrangement of the exhibition cases of amphibians and reptiles, begun in 1935, was completed in 1936, with the addition of nine models of snakes and eight of lizards. Notable among the snakes placed on exhibition were the fer-de-lance, the most important poisonous snake of tropical America, made from a specimen brought to the Museum by the Mandel Guatemala Expedition; the common European viper; and the blue racer and milk snake from the Chicago area. Especially notable among the lizards are the Galapagos land iguana, and the large East Indian monitor. Models of two species of the large lizards of the family Scincidae, characteristic of Australia, were added to the exhibition series, based on material received from the Chicago Zoological Society. Other models completed during the year are a prairie rattlesnake, a large lizard representing the African family Gerrhosauridae, a western spade-foot toad, and the large Jamaican tree frog. Molds were made of a variety of interesting forms acquired from the Chicago Zoological Society and from the Lincoln Park Zoo.

In order to display in a more attractive manner the lower invertebrates that were formerly on exhibition, eight cases were installed with sponges, millepores, sea-fans, corals, sea-stars and

sea-urchins. These were placed in Albert W. Harris Hall (Hall 18). Although most of the specimens consist only of the calcareous or horny skeleton of the animals, glass models are utilized to show the color and form of soft-bodied creatures, like jellyfish, sea-anemones and sea-cucumbers. The cases were prepared for exhibition, under the supervision of Curator William J. Gerhard, by preparators in the Department of Anthropology, who are especially qualified for such work.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

A quarter of a century has now passed since the founding, through the generosity of the late Norman Wait Harris, of this Department for the extension of Museum benefits into the Chicago schools. During these twenty-five years Museum preparation and exhibition methods have advanced markedly. This Department has kept pace with the improvements in technique, the most important of which are the development of the cellulose-acetate method for reproducing perishable specimens and accessories, the use of sheet celluloid in the making of flower petals and leaves of plants, the use of balsa wood for bodies in mounting birds and small mammals, and the installation of curved colored backgrounds in habitat exhibits. It is essential that Harris Extension exhibits be true to nature, attractively installed, durable enough to withstand frequent transportation, yet light enough to be handled by children.

The Department of the N. W. Harris Public School Extension has currently available for loan to the schools 1,212 traveling exhibits, after withdrawal during 1936 of eighteen cases which, due to long use, deterioration of specimens, loss of present-day interest, or irreparable damage, were no longer of value. Included in the total in service are twenty-one new cases which were completely prepared and installed during the year. Sixty older cases were completely reinstalled, repairs of varied extent were made on 353 cases, and several more new ones were under way at the end of the year.

The reinstallation activities of the Department staff have been concerned chiefly with the changing of case interiors and specimen plaques, and the adoption of labels printed on the buff-colored stock now used for all the Museum's exhibits. Where it seemed desirable, replacements were made with new specimens or accessories. Better methods of attaching specimens to the plaques have been developed, resulting in greatly improved appearance of the exhibits.

During 1936 a larger number of educational institutions was served than at any previous time, the total being 446, an increase of thirty-one over the preceding year. Of these, 379 were public schools with an enrollment of 463,539 pupils. Sixty-seven other institutions, including thirty-three parochial schools, eight private schools, two Boys' Union League Clubs, eight social settlements, seven branches of the Y.M.C.A., and nine branches of the Chicago Public Library, were also served. These organizations made the exhibits available to approximately 250,000 additional persons.

Special loans of several cases were made to the Chicago Council of the Boy Scouts of America for their annual circus, and to the International Horticultural Exposition, both of which were held at the International Amphitheatre of the Union Stock Yards. Cases were sent also to the Algonquin, Illinois, summer camp of the United Charities of Chicago. Three cases were loaned to the Museum and Art Institute of Kalamazoo, Michigan.

All cases were returned to the Department laboratories at the close of the school year, and were given a thorough inspection and cleaning during the summer.

To maintain the regular bi-weekly delivery of 892 cases, two to each school, two new motor trucks, especially equipped, were placed in operation at the beginning of the fall semester, displacing the trucks formerly in use. Total mileage of Museum trucks in this service was 11,266 for the year.

As in past years, many letters were received from school authorities and others showing a growing interest in and appreciation of the educational value of the Harris Extension work.

THE JAMES NELSON AND ANNA LOUISE RAYMOND FOUNDATION FOR PUBLIC SCHOOL AND CHILDREN'S LECTURES

In 1936, as in previous years, the James Nelson and Anna Louise Raymond Foundation has provided series of entertainments, lectures, and other activities for the education and enjoyment of children. Included were special patriotic programs, and the regular spring and autumn courses of motion picture programs presented in the James Simpson Theatre of the Museum, as well as guide-lecture tours of the exhibits available to parties of children throughout the year, and extension lectures given in classrooms and assembly halls of the schools. A new record was made in the number of groups

coming to the Museum for conducted tours; also, there was an increase in the number of requests for lectures in the schools.

ENTERTAINMENTS FOR CHILDREN—RAYMOND FOUNDATION

The programs in the Saturday morning series of free motion pictures, presented in the James Simpson Theatre during the spring and autumn, are appended:

SPRING COURSE

March 7—Chumming with Chipmunks; The Gallas and Their Cattle; Making the Deserts Bloom; The Lair of the Spider.
March 14—When Jellyfish and Starfish Meet; The Iceberg Patrol; Spinning and Weaving.
March 21—Cliff Dwellers; In the Land of Mountain Sheep; The Beauties of a Great National Forest; Birds and Beasts of the American Desert.
March 28—Children of the Balkans; "Thar She Blows;" Toads; Earthquakes.
April 4—The Silent Enemy.
April 11—Who's Who in the Zoo; A Visit to Boulder Dam; Where the Bananas Grow.
April 18—Glimpses of the Ethiopians at Home; Mystery of the Ferns; Travel Through the Ages; Strange Animals of the Galapagos.
April 25—Springtime; The Deadly Mosquito; The Animals Call a Congress; The Bees—How They Live and Work; When Summer Comes.

AUTUMN COURSE

October 3—Indians at a Pow-wow; The Fish That Builds a Nest; Whale and Walrus Hunting in Alaska; The Indian at Work.
October 10—The Coral Polyp and Its Work; The Adventures of Columbus.*
October 17—Blowing Soap Bubbles; The Friendly Elephant Seal; Sea Shells and Their Uses; Palms and Cacti; Charming Ceylon.
October 24—The Parade of Comic Balloons; A Visit to a Rubber Plantation; Glass Blowing; Glimpses of Java.
October 31—Ship Ahoy!; Leading a Dog's Life; Children of Holland; Chumming with Animals.
November 7—Trailmates (*The story of Wrongstart, a dog, and his master in Alaska*).
November 14—Our Neighbors, the White-tailed Deer; Where Pineapples Grow; The Story of Sulphur; Strange Salt Workers of Formosa.
November 21—In the Days of Chivalry; Armor of Horse and Man; Where Ostriches and Rhinos Meet; Beautiful Iguassu.
November 28—Forest Folk; The Pilgrims.*

*Gift to the Museum from the late Chauncey Keep.

In addition to the regular series of entertainments, two special programs were offered in February as follows:

February 12—Lincoln's Birthday Program: My First Jury; The Call to Arms.
February 22—Washington's Birthday Program: Washington, the Boy and Man.

In all, nineteen programs in the Simpson Theatre were offered to the children of the city and its suburbs. Total attendance at these entertainments was 25,759. Of this number, 4,381 came to the special programs, 8,824 to the spring course, and 12,554 to the autumn series.

The following newspapers gave publicity to the programs: *Chicago Daily News, Chicago Tribune, Chicago Herald and Examiner, Chicago Evening American,* and *Chicago Daily Illustrated Times.*

To the Chicago, Rock Island, and Pacific Railroad, and the Goodyear Tire and Rubber Company, expressions of appreciation for films loaned for the programs are herewith made.

MUSEUM STORIES FOR CHILDREN—RAYMOND FOUNDATION

Two series of Museum Stories for Children were prepared by members of the Raymond Foundation staff. These were printed by Field Museum Press in folder form, and all children attending the entertainments were handed copies. In subject, some of these stories were correlated with films shown in the Simpson Theatre. The titles of the stories in each series were as follows:

Series XXVI—The Cattle Family; The Story of Flax; The Story of Mesa Verde; Earthquakes; Indian Bows and Arrows; Tropical Fruits; Ferns; The Grasshopper Family.

Series XXVII—North American Indian Beads; Coral Gardens; The Cactus Family; Balloons and Their Uses; The Koala or Real Teddy Bear; Land of Copper and Caribou; The Story of Common Salt; Armor Through the Ages; Gourds and Pumpkins and Their Uses.

Copies of these stories were distributed to children during the summer by displaying them at the North Door in a holder from which they could be taken, in addition to the regular distribution effected at entertainments. The year's total distribution of the stories was 37,500 copies.

LECTURE TOURS FOR CHILDREN—RAYMOND FOUNDATION

Classwork in the exhibition halls was extended to the following groups:

	Number of groups	Attendance
Tours for children of Chicago schools		
Chicago public schools	470	16,673
Chicago parochial schools	34	1,065
Chicago private schools	10	186
Tours for children of suburban schools		
Suburban public schools	202	6,147
Suburban parochial schools	12	474
Suburban private schools	9	169
Tours for special groups from clubs and other organizations	73	3,566

Guide-lecture service was given to 810 groups in all, and the attendance was 28,280. During the month of May alone, 104 groups from the public schools of the city, and sixty-three from suburban schools were served, each receiving one hour's attention

from a guide-lecturer. On December 1, a party of 706 girls, assembled from communities in forty-four states and Canada as delegates to the National 4-H Clubs Congress, was given special guide-lecture service for tours of certain halls. On December 3, the 4-H Clubs sent 700 boys for similar tours. These boys and girls, representative of the finest types of rural youth, later sent hundreds of letters evincing their keen interest in and appreciation of the Museum's exhibits.

EXTENSION LECTURES—RAYMOND FOUNDATION

Extension lectures were offered to the schools, as in previous years. The subjects presented in classrooms and assemblies, before audiences of both high and elementary schools, were as follows:

For Geography and History Groups

Glimpses of Eskimo Life; South America; North American Indians; Glimpses of Chinese Life; Native Life in the Philippines; Mexico and Its Southern Neighbors; The Romans; The Egyptians; Migisi, the Indian Lad.

For Science Groups

Field Museum and Its Work; Prehistoric Plants and Animals; Insects and Reptiles; The Story of Rubber; Coal and Iron; Coffee, Chocolate and Tea; A Trip to Banana Land; Birds of the Chicago Region; Animal Life in the Chicago Region; Trees of the Chicago Region; Wild Flowers of the Chicago Region; Animals at Home; Our Outdoor Friends.

The extension lectures given by the staff of the Raymond Foundation totaled 444, and the aggregate attendance was 165,757.

ACCESSIONS—RAYMOND FOUNDATION

The Raymond Foundation acquired during the year, for use in the Theatre and the extension lectures, 674 slides made by the Division of Photography. The Museum Illustrator colored 370 of these.

The Foundation received also 3,600 feet (4 reels) of motion picture film entitled *Trailmates*, made and presented by Captain Jack Robertson, of Oakland, California; and 4,000 feet (4 reels) of film entitled *Undersea Life*, taken by Mr. J. E. Williamson, of Lake Worth, Florida, leader of the Field Museum–Williamson Undersea Expedition to the Bahamas (1929).

LECTURE TOURS AND MEETINGS FOR ADULTS—RAYMOND FOUNDATION

As in other years, guide-lecture service was made available without charge to clubs, conventions, colleges and other organizations, and to Museum visitors in general. In addition to the regular afternoon tours, morning tours were given during July and August.

For the information of visitors, printed monthly schedules were distributed at the main entrance, and through cooperating agencies such as libraries and other civic centers throughout the city and in the suburbs as well. The public tours included 106 of a general nature, and 196 covering specific subjects. These were taken advantage of by 292 groups, comprising 5,204 individuals. In addition to the public tours, there were special tours for ninety groups from colleges, clubs and other organizations, in which 1,911 persons participated.

The Board of Education used the James Simpson Theatre on June 4 for the commencement exercises for 837 foreign-born adults. On November 2, the small lecture hall was used for three discussions of Field Museum and its work, attended by 509 high school students. These lectures were followed by conducted tours.

SUMMARY OF ATTENDANCE AT ENTERTAINMENTS, LECTURES, TOURS, ETC.—RAYMOND FOUNDATION

The number of groups reached through the activities of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures totaled 1,659, and the aggregate attendance included in these groups numbered 228,257 individuals.

LECTURES FOR ADULTS

During the spring and autumn months the Museum's sixty-fifth and sixty-sixth courses of free lectures for adults were given on Saturday afternoons in the James Simpson Theatre. They were illustrated, as usual, with motion pictures and stereopticon slides. Following are the programs of both series:

SIXTY-FIFTH FREE LECTURE COURSE

March 7—Where Rolls the Oregon.
Dr. William L. Finley, Portland, Oregon.

March 14—Gold, Diamonds and Orchids.
Mr. William La Varre, New York.

March 21—Getting the Killer.
Mr. Sasha Siemel, New York.

March 28—A New Dinosaur Kingdom.
Mr. Barnum Brown, American Museum of Natural History, New York.

April 4—In the South Seas on the *Zaca*.
Dr. James P. Chapin, American Museum of Natural History, New York.

April 11—The Barbary States.
Mr. H. C. Ostrander, Jersey City, New Jersey.

April 18—Exploring the Atlantic's Greatest Deep.
Dr. Paul Bartsch, Smithsonian Institution, Washington, D.C.

EMPEROR PENGUIN
Hall 21
Specimens collected by the Second Byrd Antarctic Expedition, 1935
Presented by Chicago Zoological Society
Taxidermy by John W. Moyer
Background by Charles A. Corwin and Arthur G. Rueckert

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April 25—The Four Arab Kingdoms by Camel and Car.
Mr. Clarence W. Sorensen, Denver, Colorado.

SIXTY-SIXTH FREE LECTURE COURSE

October 3—Alone across Arctic America.
Mr. David Irwin, Grand Rapids, Michigan.

October 10—Real Australia—the Land That Is Different.
Rev. James Marshall, Turramurra, Sidney, New South Wales, Australia.

October 17—Sun and Silence in Death Valley.
Mr. John Claire Monteith, Hollywood, California.

October 24—Siam and Java—Oriental Wonderlands.
Mr. Branson De Cou, New York.

October 31—Awakening of Iran.
Mr. Herrick B. Young, New York.

November 7—Recent Discoveries in the Maya Field.
Dr. Sylvanus G. Morley, Carnegie Institution, Washington, D.C.

November 14—Some Wonders of the Plant World.
Mr. Arthur C. Pillsbury, Berkeley, California.

November 21—Ceylon, the Island of Spice.
Mr. H. C. Ostrander, Jersey City, New Jersey.

November 28—Into the New World under the Sea.
Mr. J. E. Williamson, Lake Worth, Florida.

The total attendance at these seventeen lectures was 17,557 persons, of whom 8,973 attended the spring course, and 8,584 the autumn course.

SUMMARY OF ATTENDANCE AT LECTURES, ETC.

The Museum rendered instruction or other services during the year to a total of 1,676 groups, aggregating 245,814 individuals. These figures include the 1,659 groups and 228,257 individuals reached through the activities of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, as well as the 17,557 persons attending the adult lectures, and the 1,346 persons attending the meetings of outside organizations to which the James Simpson Theatre and the small lecture hall were made available.

LIBRARY

During 1936 important physical improvements have been made in the Library. Appearance and convenience have been served by making a new entrance into the room across the hall from the reading room, directly opposite the doors of the latter.

Many books which showed wear resulting from years of hard usage were repaired and returned to the shelves during the year. All the leather-bound books have been treated with oil, which

has bettered their appearance and prolonged their serviceability. For years the binding of books and periodicals had been deferred and the amount of work accumulated had become appalling. In the past year, with the aid made available by the assignment of federal Works Progress Administration workers, a beginning has been made on this task. Concurrently with repairs and binding, the shelves are being cleaned, and an inventory is under way.

The Library's most important source of accessions is its exchanges. These bring the latest information on scientific work being done in this and other countries. As in previous years, many desirable publications have been received during 1936 through this medium.

An attempt has been made to obtain complete sets of the publications of a few scientists who had in earlier years favored the Library by sending copies of some of their writings. These requests have met with most gracious response.

During the year there have been more than 5,000 accessions of books and pamphlets, bringing the total number of works now in the Library to 105,032. It is gratifying to note that the Library is proving year after year to be of increasing utility to members of the staff of all Departments of the Museum. This growing use of the books emphasizes the necessity of continuing efforts to obtain further material for which demands have been made. Not only are current works sought, but older books also are frequently required for comparative study. The Library has partial files of various periodicals that are much used, and it is hoped gradually to complete many of these. A few years ago financial conditions compelled the Library to cancel subscriptions to many periodicals. Some of these were resumed in 1936, and at the same time the volumes for the intervening years were bought. An important purchase was that of early volumes of *Zoologischer Anzeiger*, completing to date the file of this valuable periodical.

Among desirable books of recent publication added by purchase during the year were: R. Bourret, *Les serpents de l'Indo-Chine;* Fuertes and Osgood, *Artist and Naturalist in Ethiopia;* A. Eckardt, *History of Korean Art* (translated from the German by Kindersley); M. Hoffman, *Heads and Tales;* J. R. Partington, *Origins and Development of Applied Chemistry;* G. C. Robson, *The Species Problem;* W. H. Ukers, *All about Coffee;* W. M. Wheeler, *Ants, Their Structure, Development, and Behavior.*

Of books long listed among the Library's desiderata there have been added: J. R. Aspelin, *Antiquités du Nord Finno-ougrien;* L. H. Bojanus, *Anatome Testudinis Europeae* (first edition, 1819–1821); Gervais, *Journal de Zoologie* (six volumes, 1872–1877); G. Hegi, *Illustrierte Flora von Mitteleuropa* (1906–1931); Hendley, *Damascening on Steel and on Iron as Practiced in India;* Hendley, *Memorials of the Jeypore Exhibition* (4 volumes, 1883); J. E. Pohl, *Plantarum Brasiliae Icones et Descriptiones Hectenus; Reise in innern von Brasilien* (1817–1821); P. Russell, *An Account of Indian Serpents* (1796–1801); L. H. Schneider, *Illustrierte Handbuch der Laubholzkunde;* G. Schuchert, *History of the Geology of the Antillean-Caribbean Region;* Sessé and Mociño, *Flora Mexicana* (second edition); B. Solvyns, *Costume of Hindostan* (1807); O. Swartz, *Nova Genera et Species Plantarum Itinere per Indian Occidental* (1783–1878).

Many welcome gifts have been received from friends of the institution, including members of the staff. Among these the following are especially deserving of mention: *Plantas Utiles de Colombia,* presented by Mr. E. P. Arbelaez; twenty volumes from the Carnegie Institution, Washington, D.C.; four books presented by Mr. Joseph N. Field, Chicago; *Variations and Diseases of the Teeth of Animals,* received from Sir Colyer Frank, London; *Cyrus Hall McCormick, Harvester, 1856–1884,* presented by Mr. Cyrus Hall McCormick, Chicago; *John W. Norton,* a biography, given by Mr. and Mrs. Frank G. Logan, Chicago; *Obras Completas de Ameghino* (volumes 19–22), sent by the Brazilian commission which is publishing this valuable work; *Roumanian Art from 1800 to Our Own Days,* contributed by G. Oprescu; two Tibetan manuscripts presented by the Reverend Theodore Sorensen, of Norway; *Coffee, the Epic of a Community,* given by Mr. Heinrich Edward Jacob; Niblack's *Coast Indians of Southern Alaska and Northern British Columbia,* presented by Mrs. James Ward Thorne, Chicago.

Mr. Stanley Field, President of the Museum, added to his many valuable gifts of previous years a copy of the first edition of Dr. Samuel Johnson's *Dictionary of the English language* (1755), which includes a history of the language and a grammar. This dictionary was the result of seven years' work, and was recognized by the lexicographer's contemporaries as a masterly production. The Museum's copy was formerly in Mr. Field's private library. Mr. Field continued also his gift of current numbers of the *Illustrated London News.*

Curator Rudyerd Boulton, Research Associate H. B. Conover, and Trustee Leslie Wheeler presented the sheets thus far issued of the *Millionth Map*, a publication of the American Geographical Society. This is the base for all comprehensive study of Hispanic America.

Professor F. E. Wood, a volunteer worker, continued his work on the Tibetan manuscripts in the collection bequeathed to the Museum by the late Dr. Berthold Laufer. This material pertains chiefly to the Bon religion. Some of the manuscripts are extremely beautiful, embellished with artistic lettering in gold and silver.

Various libraries have continued their courtesies by lending to Field Museum books required by members of the staff and not available here. Acknowledgment with gratitude is hereby made especially to the following: Library of Congress, Washington, D.C.; United States Department of Agriculture; Army Medical Library, Washington, D.C.; John Crerar Library, Chicago; Library of the University of Chicago; Library of the American Museum of Natural History, New York; Harvard University Library, and the Museum of Comparative Zoology and Peabody Museum of Harvard; and the Newberry Library, Chicago. Field Museum has reciprocated by lending to various libraries books required for research.

DIVISION OF PRINTING

Production of the Division of Printing exceeded by far that of any previous year in the history of the Museum. Many publications for which manuscripts had been completed several years ago, but issuance of which had been delayed because of insufficient labor and mechanical facilities, were printed in 1936. Very little of such deferred work now remains. The heavy increase in production was made possible by the purchase of additional machinery and other equipment, and by the large extra force of compositors, monotype operators, pressmen, binders, assistants in proofreading, and other helpers furnished practically throughout the year by the federal Works Progress Administration.

There were twenty-eight new numbers issued by Field Museum Press in the regular publication series, requiring an aggregate of 4,783 pages of type composition (as against 992 pages in 1935). The number of copies printed was 27,895. Three of these publications were in the Anthropological Series, nine in the Botanical Series, one in the Geological Series, fourteen in the Zoological Series, and one was the *Annual Report of the Director* for 1935. In addition,

813 copies were printed of a 26-page index for Volume XI of the Botanical Series. Besides the regular series, miscellaneous publications of the year include a 16-page booklet in the Museum Technique Series, of which 666 copies were printed; and six numbers in the Leaflet Series (three on anthropological, and three on botanical subjects), aggregating 468 pages of type composition, and printed in editions totaling 11,014 copies.

The total number of exhibition labels printed for all Departments of the Museum was 7,651. Other miscellaneous work, such as the twelve issues of *Field Museum News*, Museum stationery and supplies, etc., brought the total number of impressions for the year to a total of 549,175.

Following is a detailed list of the publications:

PUBLICATION SERIES

350.—Botanical Series, Vol. XII. The Forests and Flora of British Honduras. By Paul C. Standley and Samuel J. Record. January 27, 1936. 432 pages, 16 photogravures. Edition 831.

351.—Botanical Series, Vol. XIII, Part I, No. 1. Flora of Peru. By J. Francis Macbride. January 27, 1936. 320 pages, 1 map. Edition 796.

352.—Botanical Series, Vol. XI, No. 5. Studies of American Plants—VI. By Paul C. Standley. February 10, 1936. 134 pages. Edition 763.

353.—Zoological Series, Vol. XXI. Fishes of the Crane Pacific Expedition. By Albert W. Herre. April 15, 1936. 473 pages, 50 photogravures. Edition 784.

354.—Report Series, Vol. X, No. 3. Annual Report of the Director for the Year 1935. January, 1936. 136 pages, 12 photogravures. Edition 5,488.

355.—Botanical Series, Vol. XIV. Index of American Palms. By B. E. Dahlgren. April 30, 1936. 456 pages. Edition 819.

356.—Anthropological Series, Vol. XXIII, No. 1. Lowry Ruin in Southwestern Colorado. By Paul S. Martin. June 4, 1936. 216 pages, 112 photogravures, 54 text figures, 4 maps. Edition 650.

357.—Botanical Series, Vol. XIII, Part II, No. 1. Flora of Peru. By J. Francis Macbride. June 10, 1936. 254 pages. Edition 844.

358.—Anthropological Series, Vol. XX, No. 2. Archaeology of Santa Marta, Colombia. The Tairona Culture. Part II, Section 1. Objects of Stone, Shell, Bone, and Metal. By J. Alden Mason. June 26, 1936. 142 pages, 99 photogravures. Edition 640.

359.—Anthropological Series, Vol. XXIV, No. 1. Egyptian Stelae in Field Museum of Natural History. By Thomas George Allen. July 24, 1936. 80 pages, 43 photogravures, and 43 copies of inscriptions in the text. Edition 707.

360.—Zoological Series, Vol. XXII, No. 1. African Reptiles and Amphibians in Field Museum of Natural History. By Arthur Loveridge. August 15, 1936. 112 pages. Edition 791.

361.—Zoological Series, Vol. XX, No. 13. Records and Measurements of Neotropical Bats. By Colin Campbell Sanborn. August 15, 1936. 14 pages. Edition 837.

362.—Zoological Series, Vol. XX, No. 14. Descriptions and Records of African Bats. By Colin Campbell Sanborn. August 15, 1936. 8 pages. Edition 834.

363.—Botanical Series, Vol. XIII, Part I, No. 3. Flora of Peru. By J. Francis Macbride. August 26, 1936. 350 pages. Edition 841.

364.—Botanical Series, Vol. XIII, Part VI, No. 1. Flora of Peru. By J. Francis Macbride. September 18, 1936. 264 pages. Edition 832.

365.—Zoological Series, Vol. XIII, Part IX. Catalogue of Birds of the Americas. By Charles E. Hellmayr. October 6, 1936. 458 pages. Edition 774.

366.—Botanical Series, Vol. XI, No. 6. Revision of the Genus Coreopsis. By Earl Edward Sherff. October 20, 1936. 200 pages, 3 text figures. Edition 824.

367.—Geological Series, Vol. VI, No. 15. The Internal Structure of the Ear in Some Notoungulates. By Bryan Patterson. October 31, 1936. 30 pages, 11 text figures. Edition 834.

368.—Zoological Series, Vol. XXII, No. 2. Secondary Sex Characters of Chinese Frogs and Toads. By Ch'eng-Chao Liu. October 31, 1936. 44 pages, 12 photogravures. Edition 817.

369.—Zoological Series, Vol. XX, No. 15. The Distribution of Bidder's Organ in the Bufonidae. By D. Dwight Davis. October 31, 1936. 12 pages, 2 text figures. Edition 808.

370.—Zoological Series, Vol. XX, No. 16. Notes on Bahaman Reptiles and Amphibians. By Karl P. Schmidt. October 31, 1936. 8 pages, 2 text figures. Edition 850.

371.—Zoological Series, Vol. XX, No. 17. Guatemalan Salamanders of the Genus Oedipus. By Karl P. Schmidt. October 31, 1936. 32 pages, 7 text figures. Edition 833.

372.—Zoological Series, Vol. XX, No. 18. Notes on Snakes from Yucatan. By Karl P. Schmidt and E. Wyllys Andrews. October 31, 1936. 22 pages, 4 text figures. Edition 825.

373.—Zoological Series, Vol. XX, No. 19. Preliminary Account of Coral Snakes of South America. By Karl P. Schmidt. October 31, 1936. 16 pages. Edition 837.

374.—Zoological Series, Vol. XX, No. 20. Notes on Central American and Mexican Coral Snakes. By Karl P. Schmidt. October 31, 1936. 12 pages, 4 text figures. Edition 841.

375.—Zoological Series, Vol. XX, No. 21. New and Imperfectly Known Small Mammals from Africa. By Wilfred H. Osgood. December 28, 1936. 40 pages. Edition 790.

376.—Zoological Series, Vol. XX, No. 22. Courtship and Mating Behavior in Snakes. By D. Dwight Davis. December 28, 1936. 34 pages, 7 text figures. Edition 775.

377.—Botanical Series, Vol. XV. Woods of Northeastern Peru. By Llewelyn Williams. December 31, 1936. 588 pages, 17 text figures, 1 map. Edition 817.

LEAFLET SERIES

Anthropology, No. 25 (third edition).—The Civilization of the Mayas. By J. Eric Thompson. June, 1936. 104 pages, 14 photogravures, 11 text figures, 1 map, 1 cover design. Edition 1,067.

Anthropology, No. 32.—Primitive Hunters of Australia. By Wilfrid D. Hambly. February, 1936. 60 pages, 12 photogravures, 1 map. Edition 2,012.

Anthropology, No. 33.—Archaeology of South America. By J. Eric Thompson. July, 1936. 160 pages, 12 photogravures, 18 text figures. Edition 1,649.

Botany, No. 11 (second edition).—Common Trees. By J. Francis Macbride. February, 1936. 44 pages, 2 photogravures, 43 halftones. Edition 1,224.

Botany, No. 18.—Common Mushrooms. By Leon L. Pray. July, 1936. 68 pages, 66 text figures, 1 cover design. Edition 2,516.

Botany, No. 19.—Old-fashioned Garden Flowers. By Donald Culross Peattie. November, 1936. 32 pages, 28 text figures, 1 cover design. Edition 2,546.

MUSEUM TECHNIQUE SERIES

Zoology, No. 4.—Clearing and Staining Skeletons of Small Vertebrates. By D. Dwight Davis and U. R. Gore. October 31, 1936. 16 pages, 3 text figures. Edition 666.

DIVISIONS OF PHOTOGRAPHY AND ILLUSTRATION

The Division of Photography produced a total of 46,186 items, including negatives, prints, photographic enlargements, lantern slides, transparent exhibition labels, etc. This is by far the largest production ever attained by the Division. Most of these items were to fill requisitions from the various Departments and Divisions of the Museum, but the number includes also 482 prints and enlargements and 144 stereopticon slides for sale on orders received from the public.

The exceedingly large amount of work performed was made possible by the assistance rendered by workers assigned to the Division by the federal Works Progress Administration. There were two photographers, and, varying at different times, from two to four clerks, from WPA, and their total working time amounted to approximately 6,000 hours. Of a total of 43,258 prints made, 38,181 (principally of type specimens of plants for the Herbarium) were the work of the WPA photographers, and the remainder were made by the regular staff of the Division. The regular staff was responsible also for the negatives, slides, and other items included in the total of 51,263 items of work. The WPA clerks made and filed some 42,000 index cards, and performed other operations in connection with the important task of cataloguing the Museum's immense negative collection which now numbers approximately 87,000 negatives.

Because of the fact that production in the Division of Printing of publications and leaflets requiring photogravure illustrations was greater in 1936 than in any previous year, the total number of prints produced by the Division of Photogravure likewise exceeded all past records. The number was 733,400, which compares with 194,750 in 1935, and 578,820 in 1934. Included, in addition to the aforementioned illustrations, are headings of posters, covers for various published works, and picture post cards. The enormous increase in the amount of work handled was made possible by the assistance of from one to three workers assigned at various times to the Division by the federal Works Progress Administration.

A wide variety of work was completed by the Museum Illustrator, who performed tasks called for by more than 800 orders received from the institution's various Departments and Divisions. Included in this total were fifty drawings, the coloring of 376 lantern slides, and lettering, retouching, map-making, etc.

DIVISION OF PUBLICATIONS

The number of scientific publications issued by Field Museum in 1936 exceeded that of any previous year, and the total distributions

to institutions on the Museum's exchange lists were correspondingly in excess of those for any similar period. During the past year the Museum sent out on exchange 16,262 copies of scientific publications, 1,776 leaflets, and 683 miscellaneous publications and pamphlets. In addition, 3,835 copies of the 1935 *Annual Report of the Director* and 1,331 leaflets were sent to Members of the Museum. Sales during the year totaled 671 scientific publications, 7,340 leaflets, and 9,366 miscellaneous publications and pamphlets, such as guides, handbooks, and memoirs.

Thirty-eight large boxes containing 5,636 individually addressed packages of publications were shipped to Washington, D.C., for distribution to foreign countries through the courteous cooperation of the Smithsonian Institution's bureau of international exchanges. An equal quantity of Museum books was sent by stamped mail to names on the domestic exchange list.

Twenty-six new exchange arrangements were established with institutions and scientists.

For future sales and other distributions, 13,648 copies of the various publications issued during 1936 were wrapped in 527 packages, labeled, and stored in the stock room.

A third edition was issued of the anthropology leaflet *The Civilization of the Mayas*, and a second edition of the botany leaflet *Common Trees*. The first editions were printed in 1927 and 1925, respectively. Numerous purchases of the leaflets entitled *The Races of Mankind* and *Prehistoric Man* again gave evidence of the great public interest in these subjects. In this, their fourth year, sales of these two leaflets totaled 1,794 copies.

As in 1935, there were again more than 1,000 copies sold of several books published outside, and handled at the Museum on consignment. These books pertain to natural history, and are written in popular style. Some of the authors are members of the Museum Staff.

General clerical service of value to the Division was received during the entire year from one helper assigned by the federal Works Progress Administration.

POST CARDS

The total number of post cards sold during 1936 was 84,050, of which 12,406 were grouped into 887 sets. The increase over the preceding year's total sales was about 12,000.

Two views on anthropological and six on zoological subjects were added to the assortment of individual post cards.

BENGAL TIGER

William V. Kelley Hall (Hall 17)

Specimens collected by James Simpson–Roosevelts Expedition, 1925

Taxidermy by C. J. Albrecht. Background by Charles A. Corwin

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

DIVISION OF PUBLIC RELATIONS

Throughout the year, the public has been kept informed of all Field Museum activities through publicity in the daily press. As in preceding years, news, feature stories, and photographs have been released several times each week. These have been published not only by Chicago newspapers, but widely circulated nationally and internationally through the medium of news distributing agencies which have extended their usual hearty cooperation to the Museum.

The aim of the Museum's publicity has continued to be not only the announcement of current activities, but the furtherance of the institution's primary educational motive: dissemination and interpretation of scientific knowledge in forms readily comprehensible to the largest possible number of persons. For this purpose, an innovation made during the latter months of the year was the designation of one outstanding exhibit each seven days as "Exhibit of the Week," and the releasing of a descriptive article and photograph.

Aside from material sent out by the Museum's Division of Public Relations, additional publicity has been received due to the interest of newspaper and magazine editors who, on their own initiative, have frequently assigned reporters and photographers to obtain material concerning the exhibits and other activities of the institution. Editorial writers, too, attracted by reports of the Museum's accomplishments, have drawn the public's attention to the Museum in their columns from time to time. Further publicity has been given to the Museum on the radio, both by individual broadcasting stations and by the network systems.

Preparation and distribution of the monthly bulletin, *Field Museum News*, also a duty of the Division of Public Relations, has been carried on as before, with the aim of presenting in the limited space available the largest amount and variety of articles and pictures possible. This was the seventh year and seventh volume of this publication, and the usual schedule, which assures delivery to all Members of the Museum promptly at the beginning of each month, was maintained. Besides keeping the Museum in monthly contact with its entire membership, and informing them of all the institution's activities, the *News* performs an additional function, that of increasing the Museum's publicity reaching the general public. This result is obtained through distribution of the bulletin to newspapers and magazines which frequently quote or reprint articles from it. It is also circulated to other scientific institutions as an item in exchange relationships.

The Museum has again enjoyed the benefits of advertising through media made available, without cost to this institution, by various organizations. Placards advertising the Museum have appeared on the street cars of the Chicago Surface Lines, and in the busses of the Chicago Motor Coach Company. The Museum has been permitted to announce its spring and autumn lecture courses again, as in so many past years, on placards displayed at city and suburban stations through the courtesy of the Illinois Central System and the Chicago and North Western Railway. Likewise, posters about the lectures have appeared in hotels, clubs, department stores, libraries, schools and other public places. Many of these organizations have further cooperated by distributing information folders prepared by the Museum.

The Division of Public Relations, in addition to press publicity and *Field Museum News*, has devoted its time to a variety of other duties, such as editorial work on certain Museum publications, special articles requested by periodicals, the handling of a large volume of correspondence, and other tasks involving much detail.

For the purpose of attracting many of Chicago's out-of-town visitors, invitations to visit the Museum have been sent to the chairmen of several hundred conventions held in this city, and thousands of Museum folders have been distributed through them.

The Division has been able to utilize, in certain work, clerical services of relief workers assigned to the Museum by the federal Works Progress Administration.

Grateful acknowledgment is herewith made to the Consolidated Press Clipping Bureaus of Chicago, which for the fourth year were so generous as to render a limited press clipping service to the Museum free of charge.

DIVISION OF MEMBERSHIPS

It is both gratifying and encouraging to be able to report a net increase of ninety-five in the number of Museum memberships on record at the end of the year 1936. This is a great improvement over conditions in 1935, and marks the first definite increase in the number of Members since 1930.

To those Members who have continued their loyal support during the years of economic stress, and to the many new Members, the Museum wishes to express its deep appreciation and gratitude for their association with the work of the institution. And to those Members who found it necessary to discontinue their membership,

an invitation is extended to join again the ranks of the many public-spirited citizens who are aiding the great educational program undertaken by the Museum.

Following is a classified list of the total number of Memberships as of December 31, 1936:

Benefactors	21
Honorary Members	16
Patrons	28
Corresponding Members	8
Contributors	112
Corporate Members	50
Life Members	287
Non-Resident Life Members	10
Associate Members	2,422
Non-Resident Associate Members	4
Sustaining Members	11
Annual Members	1,269
Total Memberships	4,238

The names of all persons listed as Members during 1936 will be found at the end of this Report.

The services of a worker assigned by the federal Works Progress Administration greatly facilitated the clerical work in the Division.

CAFETERIA

In the lunch rooms operated in the Museum, meals or refreshments were served to a total of 118,841 persons during 1936. The patrons of the main cafeteria numbered 81,534, while those using the children's room totaled 37,307. These figures represent considerable increases over 1935 business, when the total number served was 98,643, of whom 69,011 patronized the main cafeteria and 29,632 the children's room.

In the pages which follow are submitted the Museum's financial statements, lists of accessions, names of Members, *et cetera*.

STEPHEN C. SIMMS, *Director*

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1935 AND 1936

	1936		1935
Total attendance	1,191,437		1,182,349
Paid attendance	68,375		54,631
Free admissions on pay days:			
Students	27,205		19,478
School children	63,914		67,514
Teachers	2,165		2,016
Members	997		1,080
Admissions on free days:			
Thursdays (53)	171,357	(52)	190,580
Saturdays (52)	373,470	(52)	385,159
Sundays (52)	483,954	(52)	461,891
Highest attendance (Sept. 6)	21,229	(Sept. 1)	22,305
Lowest attendance (Jan. 22)	73	(Jan. 22)	61
Highest paid attendance (Sept. 7)	2,694	(Sept. 2)	2,842
Average daily admissions (366 days)	3,255	(365 days)	3,239
Average paid admissions (209 days)	327	(209 days)	261
Number of guides sold	5,339		4,814
Number of articles checked	16,969		14,853
Number of picture post cards sold	84,050		72,300
Sales of publications, leaflets, handbooks, portfolios, and photographs	$4,441.33		$4,079.94

COMPARATIVE FINANCIAL STATEMENTS

FOR YEARS 1935 AND 1936

INCOME	1936		1935	
Endowment Funds	$173,521.14		$173,834.39	
Funds held under annuity agreements	38,646.13		36,724.36	
Life Membership Fund	13,672.74		12,878.81	
Associate Membership Fund	12,407.71		12,132.13	
Chicago Park District	91,029.94		140,838.65	
Annual and Sustaining Memberships	11,167.00		10,149.00	
Admissions	17,093.75		13,657.75	
Sundry receipts	12,666.29		16,909.10	
Contributions, general purposes	450.00		.....	
Contributions, special purposes (expended *per contra*)	48,567.37		13,530.00	
Special funds: Part expended this year for purposes designated (included *per contra*)	16,884.79		18,138.76	
		$436,106.86		$448,792.95
EXPENDITURES				
Collections	$ 54,636.54		$ 56,395.67	
Expeditions	1,228.47		561.84	
Furniture, fixtures, etc.	13,180.07		12,321.25	
Pensions, group insurance	15,833.45		15,418.36	
Departmental expenses	41,342.48		32,680.82	
General operating expenses	327,831.67		263,850.29	
Annuities on contingent gifts	36,431.64		36,205.39	
Added to principal of annuity endowments	2,214.49		518.97	
Interest on loans	3,828.99		3,930.93	
Paid on bank loans	38,624.20		.....	
		$535,152.00		$421,883.52
	Deficit	99,045.14	Balance	$ 26,909.43
Contribution by Mr. Marshall Field		74,625.93		
	Net Deficit	$ 24,419.21		
Notes payable January 1		$ 95,000.00		$ 95,000.00
Paid on account, by contribution of Mr. Stanley Field		38,624.20		.....
Balance payable December 31		$ 56,375.80		$ 95,000.00

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

		1936		1935
Income from Endowment		$16,717.15		$15,684.04
Operating expenses		16,365.50		17,590.04
December 31	Balance	$ 351.65	Deficit	$ 1,906.00

LIST OF ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

BARODA, HIS HIGHNESS MAHARAJA GAEKWAR SIR SAVAJI RAO III, Baroda State, India: 1 Sankheda lacquer-work cradle, 1 Patola tablecloth of pongee silk, 1 Visnagar repoussé low table of 3 metals, and 1 Visnagar carved wooden buffalo of teakwood—Baroda State, India (gift).

BOULTON, MR. AND MRS. RUDYERD, Chicago: 230 stone and bone implements—near Salisbury, Rhodesia, South Africa (gift).

BRECKINRIDGE, MISS MARVIN, New York: 16 stone implements—Kaffeifontein, Cape Province, South Africa; and 6 prints of Bushman cave paintings—Plum Pudding Kopje Dombashawa, Rhodesia, South Africa (gift).

BURLEY, CLARENCE, Winnetka, Illinois: 1 whale harpoon with head and rope, and 1 sealskin float for same—Hudson Bay Eskimo; and 1 rabbit-fur blanket—Cree Indians, James Bay, Hudson Bay, Canada (gift).

BUSTAMANTE, ELVA, Kokomo, Indiana: "Indian suit," including breast-, ankle-, stomach-, wrist- and head-pieces of parrot and other bird feathers—Ecuador (gift).

CHANCELLOR, MRS. PHILIP, Hollywood, California: 2 skulls with modeled faces—Central Sepik River, North New Guinea (gift).

CHICAGO HISTORICAL SOCIETY, Chicago: Mummy of baby found in tree top—Montana; and 709 stone implements and potsherds—Arkansas, New York, Utah, Tennessee, and central United States (gift).

FIELD, HENRY, Chicago: 12 puppets, 21 playing cards, 1 battle-ax—Teheran, Iran (gift); 2 skulls—modern Arabs, An Najaf, Iraq (gift).

FIELD MUSEUM OF NATURAL HISTORY: Transferred from Department of Zoology: 1 skeleton of male orang utan.

GLADWIN, HAROLD S., Gila Pueblo, Globe, Arizona: 50 pieces of Basket Maker pottery, dated about A.D. 600 by tree-ring study at Gila Pueblo—Durango, Colorado (gift).

KNOBLOCK, BYRON, La Grange, Illinois: 2 human skulls—California; 4 human skulls and fragmentary bones—Illinois; 1 Folsom-like point—Indiana; 2 human skulls, male—California (exchange).

LAZZAR, JOSEPH, Bagdad, Iraq: 4 rare painted potsherds—Abu-Shahrain, Iraq (gift).

LEWIS, DR. ALBERT B., Chicago: 1 betel-nut box of woven strips of bamboo covered with lacquer and painted designs—Rangoon, Burma (gift).

MCDONALD, EUGENE F., JR., Chicago: 1 painted conch-shell trumpet—from grave, State of Nayarit, Mexico (gift).

NICHOLS, HENRY W., Chicago: 1 man's costume and cap of inner bark of a tree—Gran Chaco, Bolivia (gift).

PHILLIPS ACADEMY, Andover, Massachusetts: 52 pottery specimens representing a series from Glaze I to Glaze IV—Pecos Pueblo, New Mexico (gift).

RHODESIA MUSEUM, Bulawayo, South Africa: 130 stone implements—Rhodesia, South Africa (exchange).

RICHARDSON, V. F. C., Haifa, Palestine: 88 samples of human hair—Transjordania and Syria (gift).

ROSENTHAL, MRS. SAMUEL R., Highland Park, Illinois: 1 pottery bowl and heads of two figurines, and 1 spindle whorl—Mitla, Oaxaca, Mexico (gift).

SMITH, MRS. GEORGE T. (FRANCES ANN GAYLORD), ESTATE OF: 718 specimens, including jade, beaded belts, porcelains, textiles, screens, glass, and semi-precious stones—China (gift).

WOOD, MISS AGNES A., Fraer, Iowa: 1 cattle whip of plaited buck hide, covered handle—Zulu, Durban, South Africa (gift).

WORK, MRS. JOSEPH W., Evanston, Illinois: 2 pieces of jewelry (necklaces), 1 of turquois and silver wires—Navaho Indians, United States; 1 piece of gold-plated silver filigree disks surmounted by inscribed pieces of jade—Peiping, China (gift).

WORKS PROGRESS ADMINISTRATION (Federal Art Project), Chicago: 6 enlarged plaster reproductions of Near East ring seals; 18 enlarged reproductions of Near East cylinder seals—Near East (gift).

DEPARTMENT OF BOTANY—ACCESSIONS

ACADÉMIE DES SCIENCES, SECTION D'AZERBAJDJAN, Baku, U.S.S.R.: 258 specimens of plants from Transcaucasia (exchange).

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pennsylvania: 59 specimens of Mexican plants (exchange).

ARMSTRONG CORK PRODUCTS COMPANY, Lancaster, Pennsylvania: branch of cork oak (gift).

ARNOLD ARBORETUM, Jamaica Plain, Massachusetts: 54 specimens of Guatemalan plants (exchange).

ARSÈNE, REV. BROTHER G., Santa Fe, New Mexico: 11 plant specimens (gift).

BAILEY HORTORIUM, CORNELL UNIVERSITY, Ithaca, New York: 182 plant specimens (gift); 423 plant specimens (exchange).

BALL, DR. CARLETON R., Washington, D. C.: 14 specimens of plants (gift).

BENKE, HERMANN C., Chicago: 9 negatives, 8 photographic prints of sycamore (gift).

BISHOP MUSEUM, BERNICE PAUAHI, Honolulu, Hawaii: 1 plant specimen (gift).

BOTANIC GARDEN, Leningrad, U.S.S.R.: 39 plant specimens (exchange).

BOTANISCHES INSTITUT, Munich, Germany: 172 plant specimens (exchange).

BRACELIN, MRS. H. P., Berkeley, California: 2 plant specimens (gift).

BRAVO H., PROFESSOR HELIA, Mexico City, Mexico: 2 plant specimens (gift).

BRISTOL, MAURICE, Elgin, Illinois: 1 plant specimen (gift).

BURKART, ARTURO, Buenos Aires, Argentina: 114 specimens of Argentine plants (exchange).

BUTLER UNIVERSITY, Indianapolis, Indiana: 260 plant specimens (exchange).

CABRERA, PROFESSOR ANGEL L., La Plata, Argentina: 144 specimens of plants, 116 photographic prints (exchange).

CALDERON, DR. SALVADOR, San Salvador, Salvador: 8 plant specimens (gift).

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, California: 288 specimens of California plants (exchange).

CÁRDENAS, PROFESSOR MARTÍN, Potosí, Bolivia: 80 specimens of Bolivian plants (gift).

CARNEGIE INSTITUTION OF WASHINGTON, DEPARTMENT OF GENETICS, Cold Spring Harbor, Long Island, New York: 31 plant specimens (gift).

CARNEGIE MUSEUM, Pittsburgh, Pennsylvania: 261 plant specimens (exchange).

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.: 475 plant specimens (exchange).

CHRYSLER, PROFESSOR MINTIN A., New Brunswick, New Jersey: 3 plant specimens (gift).

CLETUS, REV. BROTHER, Fort Logan, Colorado: 310 specimens of Colorado plants (gift).

CONSERVATOIRE ET JARDIN BOTANIQUES, Geneva, Switzerland: 1,773 plant specimens (exchange).

CORNING, W. H., Chicago: 1 plant specimen (gift).

DANFORTH, RALPH E., West Boylston, Massachusetts: 1 plant specimen (gift).

DARROW, DR. ROBERT A., Tucson, Arizona: 41 plant specimens (gift).

DARTMOUTH COLLEGE, DEPARTMENT OF BOTANY, Hanover, New Hampshire: 99 plant specimens (gift).

DEAM, CHARLES C., Bluffton, Indiana: 10 plant specimens (gift).

DEGENER, OTTO, Honolulu, Hawaii: 237 specimens of Hawaiian plants (gift).

DE PAUW UNIVERSITY, Greencastle, Indiana: 440 specimens of plants from Honduras (exchange).

DIRECCION GENERAL DE AGRICULTURA, Guatemala City, Guatemala: 5 plant specimens (gift).

DIRECTORIA DE PLANTAS TEXTEIS, Fortaleza, Ceará, Brazil: 34 specimens of textile plants (gift).

DOOLITTLE, MRS. HAROLD M., Onekama, Michigan: 1 plant specimen (gift).

DUGAND, ARMANDO, Barranquilla, Colombia: 1 plant specimen (gift).

DUKE UNIVERSITY, DEPARTMENT OF BOTANY, Durham, North Carolina: 18 plant specimens (exchange).

DUNHAM, WILLIAM H., Evanston, Illinois: 2,000 specimens of plants from United States and Europe (gift).

DURNO, W. F., Chicago: 2 plant specimens (gift).

EIFRIG, PROFESSOR G., Oak Park, Illinois: 18 specimens of plants (gift).

ELIAS, REV. BROTHER, Barranquilla, Colombia: 355 specimens of Colombian plants (gift).

FERNANDES, PROFESSOR GRIJALVA, Maracanahú, Ceará, Brazil: 10 plant specimens (gift).

FIELD, HENRY, Chicago: 112 plant specimens (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Dr. B. E. Dahlgren: 1 plant specimen.

Collected by Rudyerd Boulton (Straus West African Expedition): 1 plant specimen.

Transferred from the Division of Photography: 831 photographic prints.

Purchases: 105 specimens of plants —Mexico; 211 specimens of plants—Peru; 269 specimens of plants—Uruguay; 23 specimens of plants—Juan Fernandez.

FISHER, GEORGE L., Houston, Texas: 9 plant specimens (gift).

FISHER, DR. R. H., Chicago: 1 plant specimen (gift).

FLORES, DR. ROMÁN S., Progreso, Yucatan, Mexico: 37 plant specimens, 12 wood samples (gift).

FLORISTS' PUBLISHING COMPANY, Chicago: 1 plant specimen (gift).

GARFIELD PARK CONSERVATORY, Chicago: 3 plant specimens (gift).

GARRETT, PROFESSOR ARTHUR O., Salt Lake City, Utah: 122 specimens of Utah plants (gift).

GENTRY, HOWARD SCOTT, Westmoreland, California: 835 specimens of Mexican plants (gift).

GIFFORD, DR. JOHN C., Miami, Florida: 1 plant specimen (gift).

GINZBERGER, DR. AUGUST, Vienna, Austria: 43 specimens of Brazilian plants (gift).

GLIDDEN COMPANY, Chicago: 20 samples of soya beans and products (gift).

GÖTEBORG BOTANISKA TRÄDGÅRD, Göteborg, Sweden: 735 plant specimens (exchange).

GRAY HERBARIUM, Cambridge, Massachusetts: 582 plant specimens, 242 photographic prints (exchange).

GREGG, CLIFFORD C., Park Ridge, Illinois: 22 plant specimens (gift).

HAYNIE, MISS NELLIE V., Oak Park, Illinois: 7 plant specimens (gift).

HEATH, LESTER H., Milton, Florida: 6 plant specimens (gift).

HERRMANN, PROFESSOR F. J., Ann Arbor, Michigan: 207 plant specimens (exchange).

HEWETSON, WILLIAM T., Freeport, Illinois: 7 plant specimens (gift).

HINTON, GEORGE B., Mina El Rincón, Mexico: 3 plant specimens (gift).

HOEHNE, DR. F. C., São Paulo, Brazil: 17 plant specimens (gift).

HOOD, PROFESSOR J. DOUGLAS, Rochester, New York: 31 plant specimens (gift).

HOTTLE, W. D., Milton, Florida: 2 plant specimens (gift).

IMPERIAL FORESTRY INSTITUTE, Oxford, England: 495 specimens of plants (exchange).

INSTITUTO BIOLOGICO, São Paulo, Brazil: 16 plant specimens (gift).

INSTITUTO DE BIOLOGÍA, Chapultepec, Mexico: 5 plant specimens (gift).

JARDIM BOTANICO, Rio de Janeiro, Brazil: 58 plant specimens (exchange).

JARDÍN BOTÁNICO, Madrid, Spain: 6,624 plant specimens (exchange).

JOHNSON, H. F., JR., Racine, Wisconsin: Collection of Amazon palm material (gift).

KENDALL, MRS. B. A., Elburn, Illinois: 1 plant specimen (gift).

KISCHE, LEO R., Columbus, Georgia: 24 wood samples (exchange).

KLUG, GUILLERMO, Iquitos, Peru: 23 plant specimens (gift).

KRIBS, DR. DAVID A., Mont Alto, Pennsylvania: 90 microscope slides of Liberian woods (exchange).

LAMB, GEORGE N., Chicago: 2 specimens of mahogany (gift).

REEF CORALS

Revised installation of marine invertebrates

Albert W. Harris Hall (Hall 18)

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

LEWIS, H. L., Carlsbad, New Mexico: 1 plant specimen (gift).

LITTLE, ELBERT L., JR., Globe, Arizona: 1 plant specimen (gift).

LOS ANGELES MUSEUM OF HISTORY, SCIENCE AND ART, Los Angeles, California: 1 plant specimen (gift).

LUNDY, RAY, Chicago: 1 trunk of choke-cherry (gift).

MARSHALL COLLEGE, DEPARTMENT OF BOTANY, Huntingdon, West Virginia: 100 plant specimens (exchange).

MEXIA, MRS. YNES, Berkeley, California: 33 plant specimens (gift).

MILLAR, JOHN R., Chicago: 4 samples of palm material (gift).

MUSÉE NATIONAL, SECTION DU BOTANIQUE, Prague, Czechoslovakia: 192 plant specimens (exchange).

MUSEO ARGENTINO DE CIENCIAS NATURALES, Buenos Aires, Argentina: 2 plant specimens (exchange).

MUSEO NACIONAL, San José, Costa Rica: 8,190 specimens of Costa Rican plants (gift).

NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR, Washington, D.C.: 230 specimens of Oklahoma plants (gift).

NATURHISTORISCHES MUSEUM, BOTANISCHE ABTEILUNG, Vienna, Austria: 596 specimens of plants (exchange).

NATURHISTORISKA RIKSMUSEET, Stockholm, Sweden: 624 specimens of plants (exchange).

NEW YORK BOTANICAL GARDEN, Bronx Park, New York: 21 plant specimens (exchange).

OAKES, O. A., Evanston, Illinois: 21 samples of woods (gift).

OSTERHOUT, GEORGE E., Windsor, Colorado: 1 plant specimen (gift).

OWEN, REGINALD, Evanston, Illinois: 2 wood specimens (gift).

PEATTIE, DONALD CULROSS, Glenview, Illinois: 11 plant specimens (gift).

POMONA COLLEGE, Claremont, California: 91 specimens of California plants (exchange).

PURPUS, DR. C. A., Zacuapam, Mexico: 1 plant specimen (gift).

RECHENBERG, MISS ELIZABETH, Valparaiso, Indiana: 3 plant specimens (gift).

RHOADES, WILLIAM, Indianapolis, Indiana: 12 plant specimens (gift).

RIJKSHERBARIUM, Leiden, Netherlands: 500 plant specimens (exchange).

ROLLINS, REED C., Cambridge, Massachusetts: 9 plant specimens (gift).

ROYAL BOTANIC GARDENS, Kew, Surrey, England: 109 plant specimens (exchange).

SCHEIN, AUGUST, Chicago: 1 glass flower pot (gift).

SCHMOLL, DR. HAZEL M., Chicago: 7 plant specimens (gift).

SCHWEITZER, MISS BERTHA M., Chicago: study material of bearberry (gift).

SCIENTIFIC OIL COMPOUNDING COMPANY, Chicago: 3 samples of vegetable oil (gift).

SEIBERT, R. J., St. Louis, Missouri: 55 plant specimens (gift).

SHATTUCK, MRS. C. H., Idaho Falls, Idaho: 3 plant specimens (gift).

SHERFF, DR. EARL E., Chicago: 283 plant specimens, 919 negatives of type specimens (gift).

SOUKUP, PROFESSOR J., Puno, Peru: 322 specimens of Peruvian plants (gift).

STATE COLLEGE OF WASHINGTON, Pullman, Washington: 101 plant specimens (exchange).

STEFFA, MRS. GRACE, Chicago: 1 plant specimen, 3 photographic prints (gift).

STILLINGER, C. R., Spokane, Washington: 70 plant specimens (gift).

SYDOW, DR. H., Berlin, Germany: 100 plant specimens (gift).

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, Washington, D.C.: 271 plant specimens (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 763 plant specimens, 44 photographic prints, 360 typewritten descriptions of new species of plants (exchange).

UNIVERSIDAD NATIONAL DE LA PLATA, INSTITUTO DEL MUSEO, La Plata, Argentina: 1 plant specimen (gift).

UNIVERSITÄT WIEN, BOTANISCHER GARTEN UND INSTITUT, Vienna, Austria: 170 specimens of Brazilian plants (gift).

UNIVERSITY OF ARKANSAS, DEPARTMENT OF BOTANY, Fayetteville, Arkansas: 100 plant specimens (exchange).

UNIVERSITY OF CALIFORNIA, DEPARTMENT OF BOTANY, Berkeley, California: 116 specimens of California plants (exchange).

UNIVERSITY OF CHICAGO, DEPARTMENT OF BOTANY, Chicago: 3,192 plant specimens (gift).

UNIVERSITY OF MICHIGAN, UNIVERSITY MUSEUMS, Ann Arbor, Michigan: 311 plant specimens (exchange).

UNIVERSITY OF MINNESOTA, DEPARTMENT OF BOTANY, Minneapolis, Minnesota: 317 specimens of Alaskan plants (gift).

UNIVERSITY OF TEXAS, DEPARTMENT OF BOTANY, Austin, Texas: 2,452 plant specimens (gift).

VALERIO, PROFESSOR MANUEL, San José, Costa Rica: 103 plant specimens (gift).

WILLIAMS, I. T. AND SON, New York: 20 planks of foreign woods (gift).

WORTHINGTON, DR. H. C., Oak Forest, Illinois: 1 plant specimen (gift).

WYETH, MRS. MINNIE A., Winnetka, Illinois: 1 plant specimen (gift).

YALE UNIVERSITY, SCHOOL OF FORESTRY, New Haven, Connecticut: 317 plant specimens (gift); 51 wood samples (exchange).

ZETEK, JAMES, Balboa, Canal Zone: 85 plant specimens, 12 photographic prints (gift).

ZINGG, DR. ROBERT M., Boulder, Colorado: 1 plant specimen (gift).

DEPARTMENT OF GEOLOGY—ACCESSIONS

AMERICAN MUSEUM OF NATURAL HISTORY, New York: Skeleton of *Moropus*—Agate Springs Quarry, Nebraska (exchange); cast of *Protoceratops* eggs (gift).

BARNES, R. M., Lacon, Illinois: 1 fossil vertebra—Lacon, Illinois (gift).

BARTNICK, BERNARD, Chicago: 1 specimen friction breccia in calcareous sandstone—Prairie View, Illinois (gift).

BEADLE, J. O., Marshall, Wisconsin: 3 specimens fulgurite in loam—Marshall, Wisconsin (gift).

BERRY, E. W., Baltimore, Maryland: 12 specimens fossil leaves—Patagonia (exchange).

BRIGHAM, E. M., Battle Creek, Michigan: 1 vapor vent—Hawaii; 3 faults—Michigan (exchange).

CARD, GEORGE W., New York: 1 specimen precious opal in shell—Australia (gift).

CHALMERS, WILLIAM J., Chicago: 1 kunzite crystal; 1 twenty-eight carat gem kunzite—Pala, California (gift).

CHICAGO HISTORICAL SOCIETY, Chicago: Collection of fossils—United States (gift).

CORNELL, MISS MARGARET M., Chicago: 1 pearl on clam shell—Little Powers Lake, Illinois (gift).

COWAN, CHARLES G., Chicago: 1 specimen petroleum in diabase dike—Trinidad, Colorado (gift).

EIFRIG, C. W. G., River Forest, Illinois: Palate of fossil peccary, *Platygonus*—Cumberland Cave, Maryland (exchange).

FABER, EDWIN B., Grand Junction, Colorado: Jaw of *Thryptacodon* (creodont)—De Beque, Colorado (gift).

FARQUHAR, DONALD, JR., Chicago: 1 cephalopod—Lemont, Illinois (gift).

FIELD, HENRY, Chicago: 30 specimens invertebrate fossils; 8 specimens minerals; 26 specimens rocks; 5 photographs—Europe; 5 specimens modern coral; 1 specimen modern worm borings—Boca Grande, Florida (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Sharat K. Roy: 46 specimens geological structures—Dutchess and Genesee counties, New York.

Collected by Elmer S. Riggs (Marshall Field Expedition to Alberta, Canada, 1922): Collection of dinosaurs and other fossils—Alberta, Canada.

Collected by Bryan Patterson: 2 specimens fossil crustaceans; 9 specimens fossil plants—Braidwood, Illinois.

FLESCH, MR. AND MRS. WALTER J., Chicago: 25 specimens minerals—various localities (gift).

FORNONZINI, GERVASO, Valtellina, Lanzada, Italy: 1 specimen artinite with natrolite on serpentine—Lombardy, Italy (gift).

GALBREATH, EDWIN C., Ashmore, Illinois: 30 specimens fossil vertebrates —Ashmore, Illinois (gift).

GILBERT, SAMUEL H., Chicago: 11 specimens minerals—North Carolina (gift).

HIGLEY, PROFESSOR L. A., Wheaton, Illinois: 1 septarium; 50 manganese-silica concretions—Buffalo, South Dakota (gift).

HILDEBRAND, L. E., Winnetka, Illinois: 2 specimens calcareous tufa—Hartford, Michigan (gift).

LOS ANGELES MUSEUM OF SCIENCE, HISTORY AND ART, Los Angeles, California: Model restoration of *Doedicurus;* casts of *Nothrotherium* skull, jaws, humerus, radius, ulna, hind foot and model of foot (exchange).

MAIN, OSCAR, Oakland City, Indiana: 1 antler of *Cervalces* species—Oakland City, Indiana (gift).

METCALF, H. G., Auburn, New York: 9 specimens upland diamond-bearing ground—Minas Geraes, Brazil (gift).

MUMBRUE, DAN P., Helena, Montana: 1 specimen talc—near Helena, Montana (gift).

NICHOLS, HENRY W., Chicago: 1 specimen pectolite—Paterson, New Jersey (gift).

NOÉ, PROFESSOR A. C., Chicago: 13 specimens coal balls—Illinois (exchange).

RAY, DR. OLAF E., Chicago: 4 octahedrite crystals; 4 specimens rutile—Jequitinhonha River, Brazil (gift).

RENIFF, Miss ELIZABETH, Chicago: 5 specimens modern coral—near Hamilton, Bermuda (gift).

ROCHE, ——, Chicago: 2 specimens minerals—Chicago, Illinois (gift).

ROY, SHARAT K., Chicago: 1 specimen fluorescent agate—Arizona (gift).

SALO, O. J., Red Lodge, Montana: 19 specimens gypsum crystals; 6 specimens calcite crystals—Montana (gift).

THURSTON, DR. FREDUS A., Chicago: 1 specimen gold ore—Kenora, Ontario, Canada (gift).

UTICA HYDRAULIC CEMENT COMPANY, Utica, Illinois: 4 specimens rock and products—Illinois; 2 specimens vermiculite—North Carolina (gift).

VON DRASEK, FRANK, Cicero, Illinois: 6 specimens minerals—Arkansas (gift).

WALKER, ALBERT, Ontario, Wisconsin: 2 specimens concretions; 1 specimen hematite replacing clay—Monteba, Wisconsin (gift).

WESTERN SHALE PRODUCTS COMPANY, Fort Scott, Kansas: 6 specimens brick shales and briquettes; 5 photographs—Fort Scott, Kansas (gift).

WHARTON, G. W., Roseburg, Oregon: 1 specimen cycad leaf in matrix—Buck Mountain, Oregon (gift).

WINSTON, HARRY, New York: 1 glass replica of the Jonker diamond (gift).

WORK, MRS. JOSEPH W., Evanston, Illinois: 7 specimens precious opal—Queretaro, Mexico (gift).

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pennsylvania: 1 birdskin —Haiti (exchange).

AMERICAN MUSEUM OF NATURAL HISTORY, New York: 2 African monkeys, 1 zebra skull—Africa (exchange).

ANONYMOUS: 1 albino bobwhite (gift).

BALDWIN, ROBERT AND RICHARD, Hammond, Indiana: 1 black rail and egg—Windfall, Indiana (gift).

BANKE, MRS. FRED, Chicago: 1 woodcock—Chicago (gift).

BARKER, G. T., Suva, Fiji Islands: 1 frog, 6 snakes—Fiji Islands (gift).

BASS BIOLOGICAL LABORATORY, Englewood, Florida: 5 fishes—Florida (gift).

BAUER, LOUIS I., Chicago: 1 three-legged domestic duck—Chicago (gift).

BEECHER, WILLIAM, Chicago: 1 common loon, 1 toad, 1 garter snake, 1 painted turtle—Lake County, Illinois (gift).

BIRKS, TOM, Chicago: 8 tiger salamanders—Chicago (gift).

BLAKE, EMMET R., Chicago: 2 birds —Chicago (gift).

BRAESTRUP, F. W., Copenhagen, Denmark: 3 rodents with 2 skeletons, 6 bats—West Africa (exchange).

BRITISH MUSEUM (NATURAL HISTORY), London, England: 1 snake—Borneo (exchange).

BROMUND, E. FRED, Chicago: 5 snakes—various localities (gift).

BROUGHMAN, WILLIAM T., Marion, Indiana: 18 frogs and toads, 1 salamander—Cook County, Minnesota (gift).

BROWER, DR. AUBURN E., Bar Harbor, Maine: 5 moths—Maine and Missouri (gift).

BROWN, PROFESSOR F. MARTIN, Colorado Springs, Colorado: 1 butterfly—Fort Churchill, Canada (gift).

BRUCE, ROBERT, Chicago: 1 brown bat—Chicago (gift).

BURT, DR. CHARLES E., Winfield, Kansas: 24 collared lizards—Winfield, Kansas; 60 salamanders, 60 toads and frogs, 43 lizards, 62 snakes—various localities (exchange).

CAGLE, FRED, Carbondale, Illinois: 75 leopard frogs—Murphysboro, Illinois (gift).

CARNEGIE MUSEUM, Pittsburgh, Pennsylvania: 2 birdskins, 2 mounted hawks, 6 salamanders, 2 lizards, 1 snake —various localities (exchange).

CHADWICK, R. W., Chicago: 40 frogs, 5 lizards, 4 snakes—eastern Ecuador (gift).

CHERRIE, GEORGE K., Newfane, Vermont: 29 rodents—Brownsville, Texas (gift).

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 21 mammals, 22 birds, 39 bird skeletons, 1 frog, 12 lizards, 33 snakes, 3 turtles, 1 crocodile —various localities; 115 birds, 12 bird skeletons, 1 bat, 3 mammal skulls, 17 fishes, 25 insects, 19 other invertebrates —Greenland, Nova Scotia, and Newfoundland (gift).

CLARK, MISS EMILY, Chicago: 12 frogs, 2 lizards, 12 snakes, 1 scorpion, 1 beetle—Nigeria (gift).

COLE, LAMONT C., Chicago: 12 salamanders, 22 toads, 297 lizards, 2 snakes —Utah and Arizona (gift).

COLORADO MUSEUM OF NATURAL HISTORY, Denver, Colorado: 1 red wolf skeleton—Brazil; 1 bird head—Guatemala (gift).

CONOVER, BOARDMAN, Chicago: 24 birdskins—various localities (gift).

DANA, MRS. DORA, West Palm Beach, Florida: 1 Abbot's bag-worm case—Florida (gift).

DANFORTH, DR. STUART T., Mayaguez, Puerto Rico: 67 lizards—West Indies (gift).

DAVIS, D. DWIGHT, Naperville, Illinois: 2 bat skins and skulls, 5 frogs, 7 snakes, 2 fishes, 149 insects—Illinois (gift).

DAVIS, MISS JANET, Homewood, Illinois: 3 salamanders, 27 frogs, 1 turtle —Three Lakes, Wisconsin (gift).

DAVIS, SPURGEON F., Barrington, Illinois: 1 green snake—Palatine, Illinois (gift).

DE PAUW UNIVERSITY, Greencastle, Indiana: 210 salamanders—Greencastle, Indiana (exchange).

DILLINGA, JOHN, Chicago: 1 nighthawk—Chicago (gift).

DUNN, DR. EMMETT R., Haverford, Pennsylvania: 1 caecilian, 42 frogs, 1 lizard, 1 snake—Panama and Costa Rica (gift).

DYBAS, HENRY, Chicago: 1 newt, 3 water-snakes—Illinois (gift).

EMERSON, DR. ALFRED E., Chicago: 33 termites—Galapagos and Solomon islands (gift).

FIELD, HENRY, Chicago: 6 lizards, 1 snake, 91 fishes, 10 insects, 37 other invertebrates—Boca Grande, Florida; 5 bats, 1 toad, 3 frogs, 88 salamanders, 16 snakes, 87 fishes, 945 insects and allies, 270 other invertebrates—England, Scotland and Wales; 5 birds—Europe; 9 salamanders, 11 lizards, 2 snakes—France; 36 mammals, 4 mammal skeletons, 27 frogs, 109 lizards, 67 fishes—Iraq (gift).

FIELD MUSEUM OF NATURAL HISTORY:

Collected by Colin C. Sanborn: 1 beetle—Huron Mountain, Michigan.

Collected by F. J. W. Schmidt and Daniel Clark (Leon Mandel Guatemala Expedition of Field Museum): 38 insects—Guatemala.

Collected by Karl P. Schmidt (Cornelius Crane Pacific Expedition of Field Museum): 4 shells, 2,019 insects and allies—various localities.

Collected by Karl P. Schmidt: 7 frogs, 10 salamanders, 3 snakes, 14 insects and allies—southern Illinois.

Collected by Karl P. Schmidt and Colin C. Sanborn: 5 pocket gophers, 63 insects—Kankakee County, Illinois.

Collected by Karl P. Schmidt, Leon L. Walters, and D. Dwight Davis: 2 blue racers—Dune Acres, Indiana.

Collected by Third Asiatic Expedition of American Museum of Natural History, New York, with Field Museum cooperating: 15 salamanders, 359 frogs, 131 lizards, 289 snakes, 22 turtles—China.

Collected by Arthur S. Vernay and Herbert Lang (Vernay–Lang Kalahari Expedition): 126 fishes—Kalahari Desert, Africa.

Transferred from Department of Anthropology; 1 rodent skull—Sumatra; 4 shells (gift).

Purchases: 1,581 mammals, 299 birdskins, 287 salamanders, 60 toads, 12 frogs, 36 lizards, 10 snakes, 72 fishes—China; 41 mammal skins and 39 skulls—Ecuador; 1 Allen's mud snake—Florida; 2 clouded leopards—India; 20 small mammals—Manchuria; 3 salamanders—Missouri.

FLEMING, ROBERT L., Mussoorie, India: 1 gavial skull—Ganges River, India; 1 fishing cat skin with skull, 52 insects and allies—United Provinces, India (gift).

FRANZEN, ALBERT J., Chicago: 7 birds, 1 snake, 7 insects—northern Illinois (gift).

FRANZEN, ALBERT J. AND EMMET R. BLAKE, Chicago: 6 shore birds—Cook County, Illinois (gift).

FULLMER, MRS. P. F., Aurora, Illinois: 1 bluejay—Aurora, Illinois (gift).

GALBREATH, EDWIN C., Ashmore, Illinois: 1 salamander, 3 cricket frogs, 1 hog-nosed snake—Ashmore, Illinois (gift).

GENERAL BIOLOGICAL SUPPLY HOUSE, Chicago: 2 tiger salamanders—North Dakota; 7 tiger salamanders—Mason County, Illinois; 2 developmental sets of meadow frog and tiger salamander (gift).

GODDARD, DR. MALCOLM, Buca, British Cameroons: 3 birds—Buca and Mount Cameroon, Africa (gift).

GRANT, GORDON, Los Angeles, California: 13 salamanders, 27 tree frogs, 65 lizards, 1 snake, 643 insects and allies, 307 other invertebrates—Los Angeles, California (gift).

GRAY, CHARLES W., Chicago: 1 spider—Bennett Springs, Missouri (gift).

GREGG, CLIFFORD C., Park Ridge, Illinois: 20 insects—Burlington, Wisconsin (gift).

GUERET, EDMUND N., Chicago: 1 white-throated sparrow—Chicago; 2 snake skeletons—Rochester, New York (gift).

HAINES, T. P., Ann Arbor, Michigan: 6 snake skulls—various localities (gift).

HAMLETT, DR. G. W. D., Baltimore, Maryland: 1 lizard, 1 snake—Brazil (gift).

HANSON, HAROLD, Chicago: 1 badger—Barrington, Illinois; 1 crow—Woodstock, Illinois (gift).

HILDEBRAND, R. D., Washington, D.C.: 23 birds—Alabama (gift).

HINAUS, MRS. JOHN, Bruce, Wisconsin: 1 albino bat—Bruce, Wisconsin (gift).

HOLLEY, FRANCIS E., Lombard, Illinois: 9 insects—Illinois, Indiana, and Madagascar (gift).

JANECEK, JOHN J., Chicago: 9 frogs, 1 lizard—Webb Lake, Wisconsin (gift).

JOPSON, MRS. H. G. M., Ithaca, New York: 7 salamanders—various localities (gift).

KARLOVIC, JOHN K., Zeigler, Illinois: 5 beetles—Provo, Utah (gift).

KELLOGG, W. K., BIRD SANCTUARY, Kalamazoo, Michigan: 3 birds (gift).

KENNEDY, PROFESSOR W. P., Bagdad, Iraq: 17 fishes, 1 crustacean—Iraq (gift).

KING, JOHN ANDREWS, Lake Forest, Illinois: 9 birds—British Guiana (gift).

KLAUBER, LAURENCE M., San Diego, California: 2 leaf-nosed snakes—San Diego County, California (gift).

KOHL, ROBERT B., Chicago: 3 birds—Bristol, Wisconsin (gift).

LADD, FRED, Wakulla, Florida: 7 black sea bass—Florida (gift).

LAYBOURNE, EDGAR G., Homewood, Illinois: 1 barn owl—Indiana; 1 frog, 15 toads, 4 lizards, 3 snakes—Austin, Texas (gift).

LEE, MRS. FRANCES, Chicago: 1 Yucatan motmot—Yucatan (gift).

LETL, FRANK, Chicago: 2 bats—Illinois (gift).

LEVY, MISS BEATRICE, Chicago: 1 hermit thrush—Chicago (gift).

LINCOLN PARK ZOO, Chicago: 11 mammals, 2 birds, 1 bullfrog, 2 lizards, 6 snakes—various localities (gift).

LOWRIE, DONALD C., Chicago: 1 bull snake—Kankakee County, Illinois (gift).

MACRERAN, JAMES, Highland Park, Illinois: 1 red bat—Highland Park, Illinois (gift).

MAHENDRA, DR. BENI C., Agra, India: 10 frogs, 10 lizards, 4 snakes—Agra, India (exchange).

MALLON, ARTHUR, Naperville, Illinois: 1 fox snake—Will County, Illinois (gift).

MARSH, ERNEST G., Austin, Texas: 1 frog, 6 lizards, 5 snakes—Coahuila, Mexico (gift).

MATHER, KING, Evanston, Illinois: 2 short-eared owls—Evanston, Illinois (exchange).

MCCAULEY, MRS. CHARLES A., Highland Park, Illinois: 1 glass sponge (gift).

MCNEIL, HENRY, Chicago: 1 red bat —Chicago (gift).

MOONEY, JAMES J., Highland Park, Illinois: 1 mink skeleton—Cook County, Illinois (gift).

MOYER, JOHN W., Chicago: 3 fishes —Miami, Florida (gift).

MUSEO DE COLEGIO SAN PEDRO NOLASCO, Santiago, Chile: 1 toad, 1 lizard, 1 snake—Santiago, Chile (gift).

MUSEO NACIONAL DE HISTORIA NATURAL, Santiago, Chile: 1 coral snake —Mendoza, Argentina (gift).

MUSÉUM NATIONAL D'HISTOIRE NATURELLE, Paris, France: 1 sole (paratype)—Bay of Suez (exchange).

MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts: 5 bats—Panama; 1 bat skin and skull—Palestine; 35 mammal skins with skulls—Africa and South America; 18 birdskins—various localities (exchange); 5 frogs, 108 lizards, 2 snakes—Bahama Islands (gift).

NEITZEL, WILLIAM, Chicago: 3 frogs, 1 snake—Michigan (gift).

NORRIS, PROFESSOR HARRY W., Grinnell, Iowa: 5 shark jaws and parts of skin—various localities (gift).

ORIENTAL INSTITUTE SYRIAN EXPEDITION OF UNIVERSITY OF CHICAGO: 2 wild boar skins with skulls, 4 frogs, 5 turtles, 14 lizards, 17 snakes, 11 insects and allies, 10 crabs—Amouk Plain, Syria (gift).

OSGOOD, DR. WILFRED H., Chicago: 44 small mammals; 1 Lincoln sparrow, 4 frogs—Ontario, Canada (gift).

PACKER, GLENN A., Chicago: 1 hognosed snake—Michigan (gift).

PATTERSON, ARTHUR, East Gary, Indiana: 1 glass snake—New Chicago, Indiana (gift).

PATTERSON, BRYAN, Chicago: 9 frogs, 2 turtles—Illinois (gift).

PEARSALL, GORDON, River Forest, Illinois: 13 snakes—various localities (gift).

PEARSON, DR. J. F. W., Coral Gables, Florida: 142 bats—Bahama Islands (gift); 9 lizards, 1 snake—Bahama Islands (exchange).

PEATTIE, DONALD CULROSS, Glenview, Illinois: 2 salamanders, 2 lizards—Tryon, North Carolina (gift).

PERKINS, H. E., Huron Mountain, Michigan: 1 bobcat—Huron Mountain, Michigan (gift).

PERKINS, R. MARLIN, St. Louis, Missouri: 1 coral snake—Brazil; 1 snake skull (gift).

PETERSEN, MRS. LINA, Chicago: 1 fish—Horn Island, Mississippi (gift).

PLATH, KARL, Chicago: 1 bat, 13 birds—various localities (gift).

PRIME, PETER, Oconomowoc, Wisconsin: 1 lizard, 7 snakes—eastern Ecuador (gift).

PRINCETON UNIVERSITY, Princeton, New Jersey: 1 birdskin—Patagonia (exchange).

QUINN, JAMES H., Chicago: 1 prairie mole—Coal City, Illinois (gift).

RAZZETO, DR. OSCAR, Lima, Peru: 7 butterflies—Peru (gift).

REEVE, CAPTAIN R. D., Rantoul, Illinois: 1 gaur skull—Malay Peninsula (gift).

RIGEL, ROBERT, Waterloo, Iowa: 1 vesper rat skin and 2 skulls—Iowa (gift).

RINGLING BROTHERS AND BARNUM AND BAILEY CIRCUS, Sarasota, Florida: 1 wallaby—Australia (gift).

ROBERTS, MRS. ELMER, Chicago: 1 least bittern—Chicago (gift).

ROMEO, PAT, Chicago: 1 nighthawk —Chicago (gift).

ROSENBERG, W. F. H., London, England: 10 birdskins—various localities (exchange).

RUECKERT, ARTHUR G., Chicago: 2 European woodcocks—Denmark (gift).

RUHE, LOUIS, New York: 1 black-necked swan—Argentina (gift).

SAIKIN, SAM D., Chicago: 7 frogs—Lakeside, Michigan (gift).

SAMUELSON, C. F., Chicago: 1 rose-breasted grosbeak—Chicago (gift).

SANBORN, COLIN C., Highland Park, Illinois: 1 least bittern, 1 spider—northern Illinois (gift).

SASKO, PROFESSOR VLADIMIR, Chicago: 12 insects—Georgia and Florida (gift).

SCHESKIE, MRS. HENRY F., Highland Park, Illinois: 1 spider—Highland Park, Illinois (gift).

SCHIMMELFING, RICHARD, Highland Park, Illinois: 1 spider—Highland Park, Illinois (gift).

SCHMIDT, JOHN M., Homewood, Illinois: 2 silver-haired bats—Dune Park, Indiana (gift).

SCHMIDT, JOHN R., Plainfield, Illinois: 1 box turtle—Clay County, Kentucky (gift).

SCHMIDT, KARL P., Homewood, Illinois: 6 frogs, 8 lizards—Mexico (gift).

SCHNIERLA, DR. THEODORE C., New York: 1 marine toad—Canal Zone, Panama (gift).

SCHREIBER, PAUL, Chicago: 1 Virginia rail—Chicago (gift).

SCHWEITZER, MISS ANNA, Chicago: 1 milk snake—Matteson, Illinois (gift).

SHEDD AQUARIUM, JOHN G., Chicago: 1 manatee—Brazil; 45 fishes—various localities (gift).

SHERMAN, DR. HARLEY B., Gainesville, Florida: 7 bats—Florida (exchange).

SHOCKLEY, C., Terre Haute, Indiana: 6 frogs, 45 salamanders—Terre Haute, Indiana (gift).

SIEMEL, SASHA, New York: 1 tapir—Matto Grosso, Brazil (gift).

SIMPSON, JOHN M. AND A. WATSON ARMOUR III, Chicago: 1 markhor skin with skull—India (gift).

SMITH, TARLETON, Waco, Texas: 2 toads, 1 lizard, 9 snakes—Chisos Mountains, Texas (gift).

SNEIDERN, KJEL VON, Cauca, Colombia: 1 tanager, 1 hummingbird—Cauca, Colombia (gift).

SNYDER, L. H., Seoul, Korea: 4 salamanders, 2 toads, 10 snakes—Songdo, Korea (exchange).

SPRINGER, STEWART, Englewood, Florida: 2 rodents, 1 spotted skunk, 1 mole—Florida (gift).

STATE NATURAL HISTORY SURVEY DIVISION, Urbana, Illinois: 3 chalcid-flies—Illinois (gift).

STEVENS, GEORGE M., Mountain View, Arkansas: 1 snapping turtle—Arkansas (gift).

TOKUDA, MITOSI, Kyoto, Japan: 7 rodents, 3 moles, 10 bats—Japan (exchange).

TREFFLICH, HENRY, New York: 1 young chimpanzee—Africa (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 185 bats, 7 birdskins—various localities (exchange).

UNIVERSITY OF CHICAGO, Chicago: 1 frog, 3 lizards, 10 snakes—various localities (gift).

VACIN, EMIL F., Oak Park, Illinois: 3 trout—Washke Lake, Wyoming (gift).

VANDERSLIEE, MRS. ——, Chicago: 1 paroquet (gift).

VILLALBA, GASTON S., Havana, Cuba: 6 birdskins—Cuba (exchange).

WARKE, THOMAS, Chicago: 1 white-throated sparrow—Chicago (gift).

WATSON, DONALD K., Chicago: 2 beetles—Niles Center, Illinois (gift).

WEBER, WALTER A., Austin, Texas: 2 frogs, 2 lizards, 2 snakes—Texas (gift).

WEED, ALFRED C., JR., Chicago: 2 marine fishes—Angola, Africa (gift).

WESTBROOK, C. I., Chicago: 1 white-throated sparrow, 1 Kirkland's water-snake—Chicago (gift).

WEYMARN, MICHAEL A., Harbin, Manchukuo: 6 small mammals and 3 skulls—Manchukuo (gift).

WHEELER, LESLIE, Lake Forest, Illinois: 1 oven-bird, 38 owls, 141 hawks —various localities (gift).

WILBORNE, MRS. CARRIE, Chicago: 1 monkey (gift).

WOOD, SHERWIN F., Los Angeles, California: 27 lizards—Los Angeles and San Bernardino counties (exchange).

ZIMMERMAN, ROBERT, Chicago: 30 fishes—Andros Island, Bahamas (gift).

ZOOLOGICAL SOCIETY OF SAN DIEGO, San Diego, California: 12 Galapagos tortoise shells—Galapagos Islands (gift).

RAYMOND FOUNDATION—ACCESSIONS

ROBERTSON, CAPTAIN JACK, Oakland, California: 4 reels of 35-mm. silent film (gift).

WILLIAMSON, J. E., Lake Worth, Florida: 4 reels of 35-mm. silent film (gift).

FIELD MUSEUM OF NATURAL HISTORY: From Division of Photography: 674 slides.

DIVISION OF PHOTOGRAPHY—ACCESSIONS

FIELD, HENRY, Chicago: 6 negatives of natives of Iraq.

FIELD MUSEUM OF NATURAL HISTORY: Made by Division of Photography: 43,258 prints, 1,846 negatives, 900 lantern slides, 100 enlargements, 42 transparencies, and 10 transparent labels.

Developed for expeditions: 30 negatives.

KANTOR, DR. CHARLES M., Chicago: 12 prints of ethnological views of Northern Territory, Australia.

NICHOLS, HENRY W., Chicago: 103 negatives illustrating prospecting methods and conditions in the early days of the Porcupine Mining Camp.

LIBRARY—ACCESSIONS

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Gump, S. G., Company, San Francisco, California.

Illinois Bell Telephone Company, Chicago.

Institut National pour l'Étude Agronomique du Congo Belge, Brussels, Belgium.

TYPE OF CASE LOANED TO THE SCHOOLS OF CHICAGO BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY

One-sixth actual size

THE LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Japan Society, New York.

Kyancutta Museum, Kyancutta, South Australia.

Lanston Monotype Machine Company, Philadelphia, Pennsylvania.

Mauritius Institute, Port Louis, Mauritius.

Meijikai, The, Tokyo, Japan.

Menendez, Oscar, Mexico City, Mexico.

Ministerio de Agricultura y Comercio, Bogotá, Colombia.

More Game Birds in America Foundation, New York.

Mori, Tamezo, Chosen, Japan.

Morris Arboretum, Philadelphia, Pennsylvania.

Museum Association of China, Peiping, China.

Museum für Völkerkunde, Basel, Switzerland.

National Advisory Council on Radio in Education, New York.

Nature Notes, Peoria, Illinois.

Naturwissenschaftlicher Verein, Hamburg, Germany.

Parker School, Francis, Chicago.

Peabody Museum of Archaeology and Ethnology, Cambridge, Massachusetts.

Perkins Institution, Watertown, Massachusetts.

Photographie und Forschung, Dresden, Germany.

Prairie Trek Expedition for Boys, Thoreau, New Mexico.

Roumanian Legation, The, Washington, D.C.

Scientific American, New York.

Shedd Aquarium, John G., Chicago.

South Manchuria Railroad Company, Dairen, Manchuria.

Texas Technological College, Lubbock, Texas.

Union League Club, Chicago.

Universidad Central Instituto Botanico, Quito, Ecuador.

Université de Tiflis, Georgia, U.S.S.R.

Vanderbilt Marine Museum, New York.

Vaughan's Seed Store, Chicago.

INDIVIDUALS

Adams, J., Toronto, Canada.

Alfaro, Colón Eloy, Washington, D.C.

Ames, Oakes, Cambridge, Massachusetts.

Andrade, Ruy de, Lisbon, Portugal.

Arbelaez, E. P.

Arpee, Levon Harris, Chicago.

Babcock, Louis L., Buffalo, New York.

Bailey, Vernon, Washington, D.C.

Bartlett, H. H., Ann Arbor, Michigan.

Batchelder, Charles F., Peterborough, New Hampshire.

Beaumont, Jacques de, Lausanne, Switzerland.

Benke, Hermann C., Chicago.

Borodin, N., Cambridge, Massachusetts.

Bose, B. B., Pusa, India.

Boulton, Rudyerd, Chicago.

Bourret, René, Hanoi, French Indo-China.

Brandstetter, Dr. Renward, Lucerne, Switzerland.

Breasted, Dr. Charles, Chicago.

Brennan, Dr. James Marks, Lawrence, Kansas.

Britton, Roswell S., New York.

Burt, Charles E., Winfield, Kansas.

Buschan, Georg, Stettin, Germany.

Caso, Dr. Alfonso, Mexico City, Mexico.

Chevasnerie, Comte A. de la, Neuilly-sur-Seine, France.

Colyer, Sir Frank, London, England.

Comas, Juan, Madrid, Spain.

Conover, H. B., Chicago.

Cornell, Margaret M., Chicago.

Darrah, William C., Cambridge, Massachusetts.

Davis, D. Dwight, Naperville, Illinois.

Davis, Harry T., Raleigh, North Carolina.

Davis, Dr. J. J., Lafayette, Indiana.

Day, Mary B., Chicago.

Devincenzi, Garibaldi J., Montevideo, Uruguay.

Dickey, Mrs. Florence V. V., Ojai, California.

Dintzes, L., Moscow, U.S.S.R.

Dorf, Ehrling, Princeton, New Jersey.

Erwin, A. T., Ames, Iowa.

Field, Henry, Chicago.
Field, Joseph N., Chicago.
Field, Stanley, Chicago.
Firestone, Harvey S., Jr., Akron, Ohio.
Fontana Company, Mario A., Montevideo, Uruguay.
Foran, Miss Ethel Ursula, Montreal, Canada.
Fosberg, F. R., Honolulu, Hawaii.
Francis, W. D., Brisbane, Australia.
Frey-Wyssling, Alb., Zürich, Switzerland.
Friedländer und Sohn, Berlin, Germany.

Geiser, S. W., Dallas, Texas.
Gerhard, William J., Chicago.

Harrasser, Dr. A., Munich, Germany.
Hendry, G. W., Berkeley, California.
Heyser, Frank, Chicago.
Hitchcock, C. Leo, Missoula, Montana.
Hoffman, Clarence H., St. Paul, Minnesota.
Huey, Laurence M., San Diego, California.

Jacob, Heinrich Edward.
Judd, C. S., Honolulu, Hawaii.

Kennedy, Walter P.
Kummerlöwe, Hans, Leipzig, Germany.

Lewis, Dr. Albert B., Chicago.
Lines, Jorge A., San José, Costa Rica.
Logan, Mr. and Mrs. Frank G., Chicago.

McCormick, Cyrus Hall, Chicago.
MacCurdy, George Grant, Old Lyme, Connecticut.
McKinley, William C., Peoria, Illinois.
McNair, James B., Los Angeles, California.
Maldonado, Bruzzone, Buenos Aires, Argentina.
Martin, Dr. Alfred, Bad-Nauheim, Germany.
Martin, Dr. Paul S., Chicago.
Matthey, Dr. Robert, Lausanne, Switzerland.
Moyer, John William, Chicago.
Müller, Dr. Reinhold F. G., Einsiedel, Germany.

Necker, Walter, Chicago.
Nichols, Henry W., Chicago.
Nininger, H. H., Denver, Colorado.
Nobre, Augusto, Oporto, Portugal.

Okada, Yaichiro, Tokyo, Japan.
Olalla, A. M., Manáos, Brazil.
Olbrechts, Frans M., Brussels, Belgium.
Oleveira Roxo, Mathias, La Plata, Argentina.
Oesterreich, R., Garmisch Partenkirchen, Germany.
Oprescu, G.
Osgood, Dr. Wilfred H., Chicago.

Peek, George N., Moline, Illinois.

Ramos, César Lizardi, Mexico City, Mexico.
Ray, Eugene, Urbana, Illinois.
Rechinger, Karl Heinz, Dresden, Germany.
Rehn, J. A. G., Philadelphia, Pennsylvania.
Richards, A. Glenn, Jr., Rochester, New York.
Riggs, Elmer S., Chicago.

Sabett, Younis S., Cairo, Egypt.
Sanborn, Colin C., Highland Park, Illinois.
Schmidt, Karl P., Homewood, Illinois.
Sennen, M., Paris, France.
Serrano, Antonio, Paraná, Argentina.
Sharmith, Helen K., Berkeley, California.
Sherff, Dr. Earl E., Chicago.
Simms, Stephen C., Chicago.
Skroztzov, B. V., Harbin, Manchukuo.
Slavik, F., Prague, Czechoslovakia.
Sörensen, Rev. Theodore, Norway.
Sprague, Colonel Albert A., Chicago.
Standley, Paul C., Chicago.
Stillwell, Jerry E., Dallas, Texas.

Taylor, Walter P., Washington, D.C.
Thompson, J. Eric, Cambridge, Massachusetts.
Thomsen, Th., Copenhagen, Denmark.
Thorne, Mrs. James Ward, Chicago.

Umrath, Karl, Graz, Austria.
Uvarov, B. P., Stavropol, U.S.S.R.

Vignati, Milciades Alejo, La Plata, Argentina.
Vos, C. M. de, Stellenbosch, Union of South Africa.

Walcott, A. B., Downers Grove, Illinois.
Wardle, H. Newell, Philadelphia, Pennsylvania.
Warren, E. B., Colorado Springs, Colorado.
Weed, Alfred C., Chicago.
Wheeler, Leslie, Lake Forest, Illinois.
Wilbur, C. Martin, Chicago.
Wiman, C., Moscow, U.S.S.R.
Woolcock, Violet, Melbourne, Australia.

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(*Signed*)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers,

Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
} ss.
COOK COUNTY }

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL] NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

DECEMBER, 1936

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars ($20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars ($100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars ($1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars ($500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars ($100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars ($100.00), at any one time, shall, upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats for all lectures and entertainments under the auspices

of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars ($50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars ($25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of $25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars ($10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees,

whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Chief

Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of

each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

FOUNDER

Marshall Field*

BENEFACTORS

Those who have contributed $100,000 or more to the Museum

Ayer, Edward E.*

Buckingham, Miss Kate S.

Crane, Cornelius
Crane, R. T., Jr.*

Field, Mrs. E. Marshall
Field, Joseph N.*
Field, Marshall
Field, Stanley

Graham, Ernest R.*

Harris, Albert W.
Harris, Norman W.*
Higinbotham, Harlow N.*

Kelley, William V.*

Pullman, George M.*

Rawson, Frederick H.
Raymond, Mrs. Anna Louise
Raymond, James Nelson*

Simpson, James
Smith, Mrs. Frances Gaylord*
Smith, George T.*
Sturges, Mrs. Mary D.*

*Deceased

HONORARY MEMBERS

Those who have rendered eminent service to Science

Chalmers, William J.
Crane, Charles R.
Cutting, C. Suydam

Field, Mrs. E. Marshall
Field, Marshall
Field, Stanley

Harris, Albert W.

Ludwig, H. R. H. Gustaf Adolf, Crown Prince of Sweden

McCormick, Stanley

Rawson, Frederick H.

Roosevelt, Kermit
Roosevelt, Theodore

Sargent, Homer E.
Simpson, James
Sprague, Albert A.

Vernay, Arthur S.

Deceased, 1936

Graham, Ernest R.

PATRONS

Those who have rendered eminent service to the Museum

Armour, Allison V.

Chadbourne, Mrs. Emily Crane
Chancellor, Philip M.
Cherrie, George K.
Collins, Alfred M.
Conover, Boardman
Cummings, Mrs. Robert F.
Cutting, C. Suydam

Day, Lee Garnett

Ellsworth, Duncan S.

Field, Mrs. E. Marshall
Field, Mrs. Stanley

Hancock, G. Allan

Insull, Samuel

Kennedy, Vernon Shaw
Knight, Charles R.

Langdon, Professor Stephen

Moore, Mrs. William H.

Probst, Edward

Rawson, Frederick H.
Roosevelt, Kermit
Roosevelt, Theodore

Sargent, Homer E.
Straus, Mrs. Oscar
Strawn, Silas H.

Vernay, Arthur S.

Wegeforth, Dr. Harry M.
White, Harold A.

Deceased, 1936

White, Howard J.
Smith, Mrs. Frances Gaylord

CORRESPONDING MEMBERS

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Cox, Mrs. Rensselaer W.
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Cunningham, John T.
Curran, Harry R.
Curtis, Austin Guthrie, Jr.
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Curtis, Mrs. Charles S.
Curtis, Miss Frances H.
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Cushman, A. W.
Cushman, Barney
Cutler, Henry E.

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Daily, Richard
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Daley, Harry C.
Dammann, J. F.
D'Ancona, Edward N.
Danforth, Dr. William C.
Dantzig, Leonard P.
Danz, Charles A.
Darrow, Paul E.
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Davey, Mrs. Bruce C.
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Davidonis, Dr. Alexander L.
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Davis, Brode B.
Davis, C. S.
Davis, Dr. Carl B.
Davis, Frank S.
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Davis, James
Davis, Dr. Loyal
Davis, Dr. Nathan S., III
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Deahl, Uriah S.
Decker, Charles O.
DeCosta, Lewis M.
DeDardel, Carl O.
Dee, Thomas J.
Deery, Thomas A., Jr.
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DeGolyer, Robert S.
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Dennis, Charles H.
Dent, George C.
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Dickinson, Robert B.
Dickinson, Mrs. W. Woodbridge
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Doctor, Isidor
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Dolese, Mrs. John
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Donnelly, Frank
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Dudley, Laurence H.
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Eckhart, Percy B.
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Ericsson, Clarence
Ericsson, Dewey A.
Ericsson, Henry
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Evans, David J.
Evans, Eliot H.
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Griffith, Melvin L.
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Groot, Lawrence A.
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Hazlett, Dr. William H.
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Heberlein, Miss Amanda F.
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Heinzelman, Karl
Heinzen, Mrs. Carl
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Henry, Huntington B.
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Hollingsworth, R. G.
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Hollister, Francis H.
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Hopkins, John L.
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Horton, Horace B.
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Howe, Clinton W.
Howe, Warren D.
Howe, William G.
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Huston, Ward T.
Huszagh, R. LeRoy
Huszagh, Ralph D.
Hutchinson, Foye P.
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Hyatt, R. C.
Hynes, Rev. J. A.

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Joyce, David G.
Joyce, Joseph
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Judson, Clay
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Llewellyn, Mrs. John T.
Llewellyn, Paul
Lloyd, Edward W.
Lloyd, William Bross
Lobdell, Mrs. Edwin L.
Lockwood, W. S.
Loeb, Mrs. A. H.
Loeb, Hamilton M.
Loeb, Jacob M.
Loeb, Leo A.
Loesch, Frank J.
Loewenberg, Israel S.
Loewenberg, M. L.
Loewenstein, Sidney
Loewenthal, Richard J.
Logan, John I.
Logan, L. B.
Long, Mrs. Joseph B.
Long, William E.
Lord, Arthur R.
Lord, Mrs. Russell
Loring, Edward D.
Loucks, Charles O.
Louer, Albert S.
Love, Chase W.
Lovell, William H.
Lovgren, Carl
Lownik, Dr. Felix J.
Lucey, Patrick J.
Ludington, Nelson J.
Ludlam, Miss Bertha S.
Ludolph, Wilbur M.
Lueder, Arthur C.
Luehr, Dr. Edward
Lufkin, Wallace W.
Luria, Herbert A.
Lurie, H. J.
Lustgarten, Samuel
Lutter, Henry J.
Lydon, Mrs. William A.
Lyford, Harry B.
Lynch, William Joseph
Lyon, Charles H.
Lyon, Frank R.

Maass, J. Edward
Mabee, Mrs. Melbourne
MacCardle, H. B.

MacDonald, E. K.
MacDougal, Mrs. T. W.
Mackey, Frank J.
Mackinson, Dr. John C.
MacLeish, Mrs. Andrew
MacLellan, K. F.
Magan, Miss Jane A.
Magill, Henry P.
Magill, Robert M.
Magnus, Albert, Jr.
Magnus, August C.
Magnuson, Mrs. Paul
Maher, Mrs. D. W.
Main, Walter D.
Malone, William H.
Manaster, Harry
Mandel, Mrs. Aaron W.
Mandel, Edwin F.
Mandel, Mrs. Emanuel
Mandel, Miss Florence
Mandel, Mrs. Robert
Manegold, Mrs. Frank W.
Manierre, Francis E.
Manierre, Louis
Manley, John A.
Mann, Albert C.
Mann, John P.
Manson, David
Marcus, Maurice S.
Mark, Mrs. Cyrus
Marks, Arnold K.
Marquis, A. N.
Marsh, A. Fletcher
Marsh, John McWilliams, II
Marsh, Mrs. John P.
Marsh, Mrs. Marshall S.
Martin, Mrs. Franklin H.
Martin, George F.
Martin, Samuel H.
Martin, W. B.
Martin, Wells
Marx, Frederick Z.
Marzluff, Frank W.
Marzola, Leo A.
Mason, Phelps
Mason, Willard J.
Massee, B. A.
Massena, Roy
Massey, Peter J.
Masterson, Peter
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Matson, J. Edward
Matter, Mrs. John
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Matz, Mrs. Rudolph
Maurer, Dr. Siegfried
Maxwell, Lloyd R.
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Mayer, Mrs. Herbert G.
Mayer, Isaac H.
Mayer, Oscar F.
Mayer, Theodore S.
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McBirney, Mrs. Hugh J.
McBride, Mrs. Walter J.
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McCarthy, Joseph W.
McClellan, Dr. John H.
McCluer, William Bittinger
McClun, John M.
McCord, Downer
McCormack, Professor Harry
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McCormick, Mrs. Chauncey
McCormick, Fowler
McCormick, Howard H.
McCormick, Leander J.
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McCready, Mrs. E. W.
McCreight, Miss Gladys Alizabeth
McCreight, Louis Ralph
McDonald, Lewis
McDougal, Mrs. James B.
McDougal, Mrs. Robert
McDougall, Mrs. Arthur R.
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McGraw, Max
McGurn, Mathew S.
McHugh, Mrs. Grover
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McKinney, Mrs. Hayes
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McLaury, Walker G.
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McMillan, John
McMillan, W. B.
McMillan, William M.
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McNulty, Joseph D.
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Melendy, Dr. R. A.
Melnick, Leopold B.
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Meyer, Abraham W.
Meyer, Albert
Meyer, Charles Z.
Meyer, Sam R.
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Miller, Hyman
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Moore, Philip Wyatt
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Nelson, Murry
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Nelson, Victor W.
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Neuffer, Paul A.
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Nichols, S. F.
Nicholson, Thomas G.
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Oldefest, Edward G.
O'Leary, John W.
Oliver, Gene G.
Oliver, Mrs. Paul
Olson, Gustaf
Omo, Don L.
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Oppenheimer, Mrs. Harry D.
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O'Rourke, Albert
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Orr, Mrs. Robert C.
Orr, Thomas C.
Orthal, A. J.
Ortmayer, Dr. Marie
Osborn, Theodore L.
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Otis, Ralph C.
Otis, Raymond
Otis, Stuart Huntington
Otis, Mrs. Xavier L.
Ouska, John A.
Owings, Mrs. Nathaniel A.

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Packard, Dr. Rollo K.
Paepcke, Walter P.
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Parker, Frank B.
Parker, Dr. Gaston C.
Parker, Norman S.
Parker, Troy L.
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Parmelee, Dr. A. H.
Partridge, Lloyd C.
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Patrick, Dr. Hugh T.
Pauling, Edward G.
Payne, Professor James
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Pearse, Langdon
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Pearson, George Albert, Jr.
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Perkins, Mrs. Herbert F.
Perry, Dr. Ethel B.
Perry, I. Newton
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Peterkin, Daniel
Peters, Harry A.
Petersen, Jurgen
Petersen, Dr. William F.
Peterson, Albert
Peterson, Alexander B.
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Peterson, Arthur J.
Peterson, Axel A.

Peterson, Mrs. Bertha I.
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Phemister, Dr. Dallas B.
Phillips, Dr. Herbert Morrow
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Pick, George
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Pierce, Paul, Jr.
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Pomeroy, Mrs. Frank W.
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Poole, George A.
Poole, Mrs. Ralph H.
Poor, Fred A.
Poor, Mrs. Fred A.
Pope, Frank
Pope, Henry
Pope, Herbert
Poppenhagen, Henry J.
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Porter, Henry H., Jr.
Porter, James F.
Porterfield, Mrs. John F.
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Post, Gordon W.
Post, Mrs. Philip Sidney
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Pottenger, Miss Zipporah Herrick
Powell, Isaac N.
Prahl, Frederick A.
Pratt, Mrs. William E.
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Prince, Leonard M.
Proxmire, Dr. Theodore Stanley
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Prussing, Mrs. R. E.
Puckey, F. W.
Pulver, Hugo
Purcell, Joseph D.
Purdy, Sparrow E.
Pusey, Dr. William Allen
Putnam, Miss Mabel C.

Quigley, William J.
Quinlan, Dr. William W.

Raber, Franklin
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Railton, Miss Frances
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Randall, Irving
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Randle, Guy D.
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Rankin, Miss Jessie H.
Ray, Hal. S.
Raymond, Mrs. Howard D.
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Reach, William
Redington, F. B.
Redington, Mrs. W. H.
Reed, Mrs. Frank D.
Reed, Mrs. Kersey Coates
Reed, Norris H.
Reed, Mrs. Philip L.
Reed, T. J.
Reeve, Mrs. Earl
Reeve, Frederick E.
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Regenstein, Joseph
Regensteiner, Theodore
Regnery, William H.
Reich, Miss Annie
Reichmann, Alexander F.
Reid, Mrs. Bryan
Reiter, Joseph J.
Remy, Mrs. William
Renshaw, Mrs. Charles
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Rew, Mrs. Irwin
Reynolds, Harold F.
Reynolds, Mrs. J. J.
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Rice, George L.
Rice, Laurence A.
Rich, Edward P.
Rich, Elmer
Richards, J. DeForest
Richards, Marcus D.
Richardson, George A.
Richardson, Guy A.
Richter, Mrs. Adelyn W.
Rickcords, Francis S.
Ricketts, C. Lindsay
Riddle, Herbert H.
Ridgeway, Ernest
Ridgway, William
Riemenschneider, Mrs. Julius H.
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Rieser, Mrs. Herman
Rieser, Leonard M.
Rietz, Elmer W.
Rietz, Walter H.
Rigney, William T.
Rinder, E. W.
Ring, Miss Mary E.
Ripstra, J. Henri
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Roberts, Clark T.
Roberts, Mrs. John
Roberts, John M.
Roberts, Dr. S. M.
Roberts, Mrs. Warren R.
Roberts, William Munsell
Robson, Miss Sarah C.
Roche, Miss Emily
Rockwell, Harold H.
Roderick, Solomon P.
Rodgers, Dr. David C.
Rodman, Thomas Clifford
Roehling, C. E.
Roehling, Mrs. Otto G.
Roehm, George R.
Rogers, Miss Annie T.
Rogers, Mrs. Bernard F.
Rogers, Bernard F., Jr.
Rogers, Dr. Cassius C.
Rogers, Joseph E.
Rogerson, Everett E.
Rolfes, Gerald A.
Romer, Miss Dagmar E.
Root, John W.
Rosborough, Dr. Paul A.
Rosen, M. R.
Rosenbaum, Mrs. Edwin S.
Rosenfeld, Mrs. Maurice
Rosenfield, Mrs. Morris S.
Rosenfield, William M.
Rosenthal, James
Rosenthal, Kurt
Rosenthal, Lessing
Rosenwald, Mrs. Julius
Rosenwald, Richard M.
Ross, Charles S.
Ross, Robert C.
Ross, Mrs. Robert E.
Ross, Thompson
Ross, Walter S.
Roth, Aaron

Roth, Mrs. Margit Hochsinger
Rothacker, Watterson R.
Rothschild, George William
Rothschild, Maurice L.
Rothschild, Melville N.
Routh, George E., Jr.
Rowe, Edgar C.
Rozelle, Mrs. Emma
Rubel, Dr. Maurice
Rubens, Mrs. Charles
Rubovits, Theodore
Ruckelhausen, Mrs. Henry
Rueckheim, Miss Lillian
Ruel, John G.
Rushton, Joseph A.
Russell, Dr. Joseph W.
Russell, Paul S.
Rutledge, George E.
Ryan, Henry B.
Ryerson, Mrs. Edward L.
Ryerson, Joseph T.

Sackley, Mrs. James A.
Sage, W. Otis
Salisbury, Mrs. Warren M.
Salmon, Mrs. E. D.
Sammons, Wheeler
Sample, John Glen
Sandidge, Miss Daisy
Sands, Mrs. Frances B.
Santini, Mrs. Randolph
Sardeson, Orville A.
Sargent, Chester F.
Sargent, John R. W.
Sargent, Ralph
Sauter, Fred J.
Sauter, Leonard J.
Sawyer, Dr. Alvah L.
Schacht, John H.
Schafer, O. J.
Schaffer, Dr. David N.
Schaffner, Mrs. Joseph
Schaffner, Robert C.
Scheidenhelm, Edward L.
Scheinman, Jesse D.
Schermerhorn, W. I.
Schlake, William
Schmidt, Dr. Charles L.
Schmidt, Mrs. Minna
Schmitz, Dr. Henry
Schmitz, Nicholas J.
Schneider, F. P.
Schnering, Otto Y.
Schnur, Ruth A.
Scholl, Dr. William M.
Schram, Harry S.
Schreiner, Sigurd
Schroeder, Dr. George H.
Schukraft, William
Schulman, A. S.
Schulze, Mrs. Mathilde
Schulze, William
Schupp, Philip C.
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Schwartz, Charles K.
Schwartz, Charles P.
Schwarz, Herbert E.
Schwarzhaupt, Emil
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Scribner, Gilbert
Scully, Mrs. D. B.
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Sears, Richard W., Jr.
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Seaverns, Louis C.
See, Dr. Agnes Chester
Seeberger, Miss Dora A.
Seeburg, Justus P.
Seifert, Mrs. Walter J.
Seip, Emil G.
Seipp, Clarence T.
Seipp, Edwin A.
Seipp, William C.
Sello, George W.
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Seng, Frank J.
Seng, V. J.
Senne, John A.
Sennekohl, Mrs. A. C.
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Shambaugh, Dr. George E.
Shanesy, Ralph D.
Shannon, Angus Roy
Shapiro, Meyer
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Shaw, Alfred P.
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Shaw, Theodore A.
Sheldon, James M.
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Shepherd, Mrs. Edith P.
Sherman, Mrs. Francis C., Sr.
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Shillestad, John N.
Shire, Moses E.
Shoan, Nels
Shorey, Clyde E.
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Shoup, A. D.
Shumway, Mrs. Edward DeWitt
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Sigman, Leon
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Silberman, Charles
Silberman, David B.
Silberman, Hubert S.
Sills, Clarence W.
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Sincere, Benjamin E.
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Smith, Franklin P.
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Smith, Jens
Smith, Jesse E.
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Smith, Walter Bourne
Smith, Walter Byron
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Smullan, Alexander
Snow, Edgar M.
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Socrates, Nicholas
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Sonnenschein, Hugo
Sonnenschein, Dr. Robert
Sonneveld, Jacob
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Spitz, Leo
Spitzglass, Mrs. Leonard M.
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Stanton, Edgar
Stanton, Henry T.
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Stern, Felix
Stern, Maurice S.
Stern, Oscar D.
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Stevens, Harold L.
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Stevens, R. G.
Stevenson, Dr. Alexander F.
Stevenson, Engval
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Straus, Melvin L.
Straus, S. J. T.
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Teter, Lucius
Thatcher, Everett A.
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Thomas, Dr. William A.
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Thompson, Floyd E.
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Turner, Tracy L.
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Tuttle, Henry Emerson
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Ullmann, Herbert S.
Upham, Mrs. Frederic W.

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Valentine, Patrick A.
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VanCleef, Paul
VanDeventer, Christopher
VanNess, Gardiner B.
VanSchaack, R. H., Jr.
VanSchaick, Gerard
VanWinkle, James Z.
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Vawter, William A., II
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Veeder, Miss Jessie
Vehe, Dr. K. L.
Vehon, Morris
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Vial, Miss Mary M.
Vickery, Miss Mabel S.
Victor, Mrs. Jessie K.
Vierling, Louis
Volicas, Dr. John N.
Volk, Mrs. John H.
VonColditz, Dr. G. Thomsen-
VonGlahn, Mrs. August
Voorhees, Mrs. Condit
Voorhees, H. Belin
Voynow, Edward E.

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Wagner, John E.
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Walker, Mrs. Paul
Walker, Samuel J.
Walker, William E.

Wallace, Robert Y.
Wallace, Walter F.
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