

Field Museum News

Published Monthly by Field Museum of Natural History, Chicago

Vol. 1

JANUARY, 1930

No. 1

NEW ZOOLOGICAL EXPEDITION DEPARTS FOR AFRICA

A new and important zoological expedition, the Vernay-Lang Kalahari Expedition for Field Museum, will soon be in operation in Africa. This expedition is financed by Arthur S. Vernay of New York and London. Mr. Vernay, who has had wide experience in big game hunting, will himself be one of the joint leaders of the party. Associated with him in the leadership will be Herbert Lang, formerly of New York, who has been engaged in African explorations for several years, and is recognized as one of the foremost authorities on African mammals. Captain B. E. H. Clifford, Imperial Secretary at Pretoria, Transvaal, British South Africa, Rudyard Boulton, ornithologist, and Allan Chapman will also be members of the expedition.

Mr. Vernay recently left New York for London, and is completing preparations there for the expedition. He will sail from Southampton for Capetown on February 13, and then proceed to Francistown where he will meet Mr. Lang. From that point, with a motor caravan and full equipment, the expedition will set out for its work in the Kalahari Desert, and along the Botletle River in the British protectorate of Bechuanaland. Hunting will be continued until about June. A number of rare animal not now represented in the Museum's collections, and some not yet obtained by any museum, will be sought. One of the chief objectives will be specimens for a habitat group of the beautiful sable antelope of Angola.

Other Expeditions

The Frederick H. Rawson-Field Museum Ethnological Expedition to West Africa, under the leadership of W. D. Hambly, Assistant Curator of African Ethnology, has completed its work in Angola (Portuguese West Africa) where more than 1,200 objects representing the Ovimbundu tribes have been collected. It is now making collections in Nigeria (British West Africa).

The Chancellor-Stuart-Field Museum Expedition to the South Pacific is completing its zoological collections,

(Continued on page 3)

A BRIEF HISTORY OF FIELD MUSEUM FROM 1893 TO 1930

By Dr. Oliver C. Farrington, Curator of Geology

Within thirty-six years Field Museum of Natural History has attained a place among the first four scientific museums of the world, and it now occupies one of the largest and finest of all museum buildings.

As is well known, the Museum was primarily an outgrowth of the World's Columbian Exposition held in Chicago in 1893. The first published suggestion that a museum should be formed as a result of the exposition was, in the opinion of the late F. J. V. Skiff, first Director of the Museum, an article by Professor F. W. Putnam in the *Chicago Tribune* of May 31, 1890. In that year and the following one Professor Putnam also addressed local bodies on this subject and his views were duly reported in the newspapers.

In 1891, Dr. G. Brown Goode, then in charge of the United States National Museum, while in Chicago to consult with the exposition directors regarding government exhibits, emphatically pointed out to J. W. Ellsworth, a member of the foreign affairs committee, the opportunity afforded by the exposition to establish a great museum. Mr. Ellsworth became an enthusiastic advocate of the plan, and he was able to interest other committee members, including William T. Baker, chairman.

As a result, purchases made abroad by this committee, and those of equipment for some departments, were viewed partly in relation to their usefulness for a future museum. Early in 1892 an organization called the Columbian Historical Association was formed, at the suggestion of members of this committee, to take advantage of the privilege granted scientific societies to import exhibits free of duty. Funds contributed to this society by various individuals were regarded by Director Skiff as being the first actually given in behalf of the Museum.

In July, 1893, a letter by S. C. Eastman, published in the *Tribune* and followed by strong editorials in other newspapers, called attention anew to the desirability of

(Continued on page 3)

SUNDAY LECTURES FOR MEMBERS

Three special illustrated lectures for Members of the Museum will be given on Sunday afternoons during January, and one in February. These are the last of the autumn and winter course of eleven lectures which began in November:

January 12—The Rainbow Isles of the Guinea Gulf

Mr. T. Alexander Barns, London, England

January 19—Shrinkers of Human Heads

Dr. Herbert Spencer Dickey, New York

January 26—Through Southern Abyssinia

Mr. C. J. Albrecht, Department of Zoology, Field Museum of Natural History, Member of the Harold White-John Coats-Field Museum Expedition to Southern Abyssinia.

February 9—Sea Hawks

Captain C. W. R. Knight, London, England

These lectures will be given in the James Simpson Theatre of the Museum, and will begin promptly at 3 P.M.

Each Member of the Museum is entitled to two seats for each lecture, to obtain which he should show his **membership card** to an attendant at the theatre on the afternoon of the lecture. Upon presentation of the card Members will be given two tickets of admission to the reserved section of the theatre.

Seats in the reserved section which have not been claimed by 3 P.M. will be offered to the public.

FIELD MUSEUM OF NATURAL HISTORY

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

BOARD OF TRUSTEES

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FIELD MUSEUM NEWS

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|-----------------------------|-------|--------------------------|-------|--------|
| STEPHEN C. SIMMS | | Director of the Museum | | Editor |
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| WILFRED H. OSGOOD | | Curator of Zoology | | |
| H. B. HARTE | | Managing Editor | | |

Field Museum of Natural History is open every day of the year during the following hours:

- | | |
|------------------------------------|---------------------|
| November, December, January | 9 A.M. to 4:30 P.M. |
| February, March, April, October | 9 A.M. to 5:00 P.M. |
| May, June, July, August, September | 9 A.M. to 6:00 P.M. |

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; a charge of 25 cents is made to non-Members on other days. Children are admitted free on all days. Students and members of the faculties of any university, college, institute or school are admitted free any day upon presentation of credentials.

The Museum is conveniently located with relation to Rapid Transit Lines (the "L"), Chicago Surface Lines, Illinois Central Suburban Trains, North Shore Line, South Shore Line, motor-buses, or automobile. Ample free parking space is available.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Guide-lecture tours of the exhibits are offered to the public. Full information appears elsewhere in FIELD MUSEUM NEWS.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division.

Courses of free illustrated lectures on science and travel for the general public, and special series of lectures for Members of the Museum, are provided at frequent intervals. Announcements will appear in FIELD MUSEUM NEWS.

In the Museum is a cafeteria where luncheon is served for visitors between 11 A.M. and 3 P.M. daily, 12 noon and 4 P.M. Sundays. Other rooms are provided for children and parties bringing their own lunches.

Members are requested to inform the Museum promptly of changes of address, so that they will not fail to receive their copies of FIELD MUSEUM NEWS and other Museum communications regularly.

FIELD MUSEUM NEWS is printed in the Division of Printing of the Museum.

To reprint material published in FIELD MUSEUM NEWS, permission should be obtained from the Editor.

FIELD MUSEUM OF NATURAL HISTORY presents herewith the first issue of FIELD MUSEUM NEWS, which is to be published monthly for the purpose of announcing, reporting, and permanently recording all activities of the Museum.

The NEWS will be sent regularly to all Members, and it is hoped it may serve to keep them all in closer and more continual touch with the institution and its accomplishments than has been heretofore possible.

All those who are interested enough to hold membership in the Museum will find the brief historical sketch of the institution, publication of which begins in this issue, of value as a record of the past.

This history is being written by Dr. Oliver C. Farrington, dean of the Museum's Curators, who has served as head of the Department of Geology since the institution's earliest days. It will outline what has been accomplished in thirty-six years since the founding of the Museum by the first Marshall Field.

THE NEW YEAR is faced by the Museum with a program calling for continued and unceasing efforts toward further expansion and improvement in all branches of the institution's work. It is the aim of those now entrusted with the administration of the Museum to make the year now beginning, and all future years, as fruitful as those of the past.

One of the most important factors in making possible a continuation of this progress is an active and interested Membership. FIELD MUSEUM NEWS is dedicated to the promotion of this interest by keeping the Members fully informed as to the Museum's activities. From so doing it is believed that the Museum and its Members will receive mutual benefits, and that the Museum will become of greater service to the Members.

GIFTS TO THE MUSEUM

Following is a list of some of the principal gifts received by the Museum during the past month:

From Professor A. R. Emerton—369 named termites; from Professor R. Kanehira—206 herbarium specimens from Peru; from Mrs. H. C. Morris—petroleum from a depth of 8,523 feet, the deepest well in the world; from William A. Schipp—145 herbarium specimens from British Honduras; from Dr. A. M. Meldrum—2 skulls of Australian aborigines; and from F. Vondrasek—23 quartz arrowheads and spear-points.

BEQUESTS AND ENDOWMENTS

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, 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,

Cash 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 under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.

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 tax-free and are guaranteed against fluctuation in amount.

HISTORY OF FIELD MUSEUM

(Continued from page 1)

a museum and aroused much public interest. In recognition of this interest, a committee of three of the directors of the exposition called a public meeting "to adopt measures to establish in Chicago a great museum that shall be a fitting memorial of the World's Columbian Exposition and a permanent advantage and honor to the city." This meeting, held on August 7, 1893, was attended by about one hundred leading citizens. As a result of the meeting a committee was appointed to incorporate an institution such as had been projected.

Under the name of "The Columbian Museum of Chicago" application was made for incorporation, with sixty-five leading citizens as incorporators and fifteen as trustees. On September 16, 1893, a charter was applied for and granted. The object of the corporation was stated to be "the accumulation and dissemination of knowledge and the preservation and exhibition of objects illustrating art, archaeology, science and history."

Meanwhile, officials of the exposition had become actively interested in the plan for the Museum, and began to solicit and procure from exhibitors gifts and transfers of desirable exhibits. Response to the requests generally was hearty, and material for the new Museum accumulated rapidly. On September 14 a communication from A. W. Manning in the *Evening Post* suggested that holders of exposition stock donate their shares to the Museum, and this suggestion brought ultimately, from about 1,100 persons, gifts of certificates totaling \$1,500,000 in par value.

Thus, seemingly, progress was being rapidly and successfully made toward the establishment of a great museum. As time went on, however, and exhibits accumulated in large amount, it began to be realized that an adequate endowment to insure permanency to the institution was as yet far from being obtained. The country-wide financial stringency which developed to alarming proportions in 1894 was already beginning to be felt. Strenuous efforts which were made to raise the amount needed failed to give the hoped-for results. By the middle of October, in the words of Director Skiff, "a period of discouragement came upon those at work for the Museum. Nothing but the faith, devotion and courage of a few men prevented the disintegration of the preliminary organization and the practical abandonment of the Museum enterprise."

(To be continued next month)

Four New Habitat Groups

As this issue goes to press final work on four new North American mammal habitat groups is being completed, and it is expected that they will be ready for public inspection within a few days. These groups show polar bears, Alaska brown bears, American bison and muskox in reproductions of scenes representing their natural environments.

Frederick H. Rawson Gives \$10,000

The Museum received in December a gift of \$10,000 from Frederick H. Rawson, member of the Board of Trustees. The gift is a contribution toward a fund for a Hall of Prehistoric Man. The hall will contain exhibits illustrating the progress of prehistoric man in western Europe from about 3,000,000 years ago down to about 10,000 B.C. A feature will be six groups of life-size figures of the principal types of early man in settings depicting

the conditions under which they lived. These will be similar in character to the Neanderthal group now on view in Ernest R. Graham Hall. The new hall will contain also other groups, and large collections of artifacts illustrating many phases of prehistoric cultures.

New Kish Exhibit

A new temporary exhibit of selected antiquities unearthed at Kish by the Field Museum-Oxford University Joint Expedition to Mesopotamia was recently placed on view in Stanley Field Hall. The objects displayed were found in graves of the earliest Sumerian period (about 3500 B. C.).

EXPEDITIONS

(Continued from page 1)

and is expected home next month. It is led by Philip M. Chancellor, its sponsor, and Norton Stuart. Important acquisitions reported include two excellent specimens of the reticulated python of Borneo, largest reptile known to science, and two of the giant lizards of Komodo. Officials of the Dutch East Indies colonial government cooperated.

The Peruvian division of the Marshall Field, Jr., Botanical Expedition to the Amazon, in charge of Llewellyn Williams, Assistant in Wood Technology, is collecting woods and other botanical material in little known parts of the interior of Peru. The main division of this expedition, which worked in Brazil under the leadership of Dr. B. E. Dahlgren, Acting Curator of Botany, returned with several thousand specimens of the native flora.

Another expedition at present in operation is the Field Museum-Oxford University Joint Expedition to Mesopotamia, which is in its eighth season of archaeological excavations at Kish. Field Museum's participation is sponsored by Marshall Field, Jr.

The final work of the William V. Kelley-Roosevelts Expedition to Eastern Asia for Field Museum was completed with the return early in December of Herbert Stevens, who led one of its several divisions which worked in French Indo-China, China and Tibet. Mr. Stevens brought a large and important collection of zoological and botanical material. Vast collections obtained by the other divisions, led by Theodore and Kermit Roosevelt, and by Harold J. Coolidge, Jr., had been previously received. The specimens collected by all divisions include 1,479 mammals, 5,194 birds, 528 reptiles and amphibians, 438 fishes, 5,000 insects and 2,400 plants. C. Suydam Cutting accompanied the expedition and gave valuable services in making both still and motion pictures.

Other expeditions which completed their work in 1929 are as follows: the Crane Pacific Expedition, sponsored and led by Cornelius Crane, which cruised over much of the Pacific, making zoological collections consisting of 852 mammals, 1,228 birds, 200 reptiles and amphibians, and 1,200 fishes; the Harold White-John Coats-Field Museum Expedition to Abyssinia, Kenya Colony and Tanganyika Territory, which also obtained zoological collections; the Second Marshall Field, Jr., Archaeological Expedition to British Honduras, which collected Maya archaeological and ethnological material; the Field Museum-Williamson Undersea Expedition to the Bahamas, which collected material for proposed undersea life groups; the Thorne-Graves-Field Museum Arctic Expedition, which collected zoological material; a second botanical expedition in Peru, an ornithological expedition to Arizona, a geological expedition to New Mexico, and a zoological expedition in India. The last four were sponsored by Marshall Field, Jr.

MUSEUM HONORS CONFERRED

By action of the Board of Trustees of Field Museum, Richard T. Crane, Jr., and Cornelius Crane, have been added to the list of Benefactors of the Museum, in recognition of their notable contributions to the institution. Other Benefactors to date include Marshall Field, founder of the Museum, Edward E. Ayer, Miss Kate S. Buckingham, Joseph N. Field, Marshall Field, Jr., Stanley Field, Ernest R. Graham, Albert W. Harris, Norman W. Harris, Harlow N. Higinbotham, William V. Kelley, George M. Pullman, Mrs. Anna Louise Raymond, James Nelson Raymond, James Simpson, and Mrs. Mary D. Sturges.

For their eminent services to science, the following recently have been elected Honorary Members: William V. Kelley, Frederick H. Rawson, Colonel Theodore Roosevelt, Kermit Roosevelt, and C. Suydam Cutting.

For their eminent services to the Museum, the following recently have been elected as Patrons: Mrs. Stanley Field, Mrs. Marshall Field, Jr., Samuel Insull, Colonel J. C. Faunthorpe, Captain Harold A. White, Major John Coats, Walter A. Strong, and Arthur S. Vernay. The death of Colonel Faunthorpe shortly after his election is regretfully recorded.

William V. Kelley has been elected a Trustee to fill the vacancy on the Board caused by the death of the late Chauncey Keep.

NEW MEMBERS

The following persons were elected to membership in Field Museum during the period from November 11 to December 11, 1929:

Life Member

Miss Florence Dibell Bartlett.

Associate Members

Mrs. Van Wagenen Alling, Mrs. W. F. Burrows, Mrs. Ernest D. Burton, Bertram J. Cahn, Henry Clarke, Harry Connors, Aaron Butler Dikeman, W. A. Douglass, George J. Dreiske, Dr. Clarence S. Duner, Herman Feigenheimer, Robert C. Fergus, Henry J. Freyn, Otto J. Hartwig, Dr. Elmer E. Henderson, Colonel Biscoe Hindman, Mrs. M. L. Johnston, William H. Kleppinger, Jr., Mrs. J. B. Lavezzorio, Mrs. Arthur R. McDougall, Brian T. Moran, Mrs. William W. Norris, Mrs. O. W. Norton, Mrs. Xavier L. Otis, Mrs. Belle G. Peet, Dr. Emil Ries, Mrs. Warren R. Roberts, Edward L. Scheidenhelm, Fred A. Snow, J. M. Williams, H. H. Windsor, Jr.

Sustaining Members

Charles M. Hines, Samuel R. Noble.

Annual Members

Miss Nellie Malina Adams, E. Hoover Bankard, Jr., Mrs. Frederick H. Bartlett, Mrs. Ira F. Bennett, John Blue, Dr. William Cary, Robert H. Clark, Earl M. Converse, Miss Martha A. Courtney, Mrs. D. W. Davis, August W. Degener, Carl Demont, Miss Kate E. Drinkwalter, Mrs. Paul Eckstorm, Charles S. Elkington, S. Adelbert Ellieson, Sr., John L. Forch, Jr., Charles G. Foucek, F. J. Freitag, Mrs. Thomas F. Geraghty, Mrs. Albert H. Gere, Mrs. T. G. Gilbert, Mrs. George E. Graves, Mrs. Marianna L. Griest, Gerald B. Hadlock, Mrs. W. P. Hammatt, Mrs. Virginia W. Haskins, John C. Helenore, Mrs. Frank L. Hill, Mrs. Lockwood Honore, Raymond C. Jensk, Mrs. Lorena M. Johnson, Howard E. A. Jones, Melville Keim, George D. Kimball, Mrs. Michael Koolish, Mrs. C. O. Kroener, Mrs. H. R. Kurrie, Harold Landau, Mrs. Harry G. Lewis, Miss Sara Lewis, Mrs. Robert Link, Mrs. H. G. Lozier, Mrs. Mary T. Mahon, Mrs. James C. Matchett, Mrs. Olive M. Mead, Miss Margaret E. Meek, Charles Z. Meyer, Frank B. Mulford, Mrs. Walter A. Netsch, Mrs. William C. Niblack, Mrs. Sigurd Olsen, Mrs. Mary E. Orrell, Mrs. Wallace Patterson, Mrs. Robert B. Pennington, Dr. A. B. Peterson, Mrs. Louise de Koven Phelps, Carl A. Pinyerd, Mrs. Nathan C. Plimpton, Mrs. John A. Prebis, Mrs. D. A. Pyott, Mrs. Henry H. Reuss, W. H. Roadifer, Mrs. Isaac Rodrick, Dr. Leigh E. Schwarz, Gerald R. Scott, Dr. C. Howard Searle, Mrs. Edward P. Vernia, Howard I. Wells.

New photogravure post card sets representing Museum exhibits are now on sale.

JANUARY GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during January:

Thursday, January 2, 11 A.M. and 3 P.M.: General Tours; Friday, 11 A.M.: South America; 3 P.M.: Porcelain, Bronze.

Week beginning January 6—Monday, 11 A.M.: Madagascar; 3 P.M.: Game Fish; Tuesday, 11 A.M.: Masks; 3 P.M.: North American Animals; Wednesday, 11 A.M.: Chicago Birds; 3 P.M.: Baskets; Thursday, 11 A.M. and 3 P.M.: General Tours; Friday, 11 A.M.: Crystal Gems and Jewelry; 3 P.M.: Chinese Dramatics.

Week beginning January 13—Monday, 11 A.M.: Looms and Weaving; 3 P.M.: Fur-bearing Animals; Tuesday, 11 A.M.: Egyptian Art; 3 P.M.: Mines and Ores; Wednesday, 11 A.M.: Beadwork; 3 P.M.: Material from Recent Expeditions; Thursday, 11 A.M. and 3 P.M.: General Tours; Friday, 11 A.M.: Religious Ceremonies; 3 P.M.: Big Game Animals.

Week beginning January 20—Monday, 11 A.M.: Cave Dwellers; 3 P.M.: Life in the South Sea Islands; Tuesday, 11 A.M.: Primitive Clothing; 3 P.M.: Maori Art; Wednesday, 11 A.M.: Mummies; 3 P.M.: The Javanese and Their Neighbors; Thursday, 11 A.M. and 3 P.M.: General Tours; Friday, 11 A.M.: Wood Carvers; 3 P.M.: Dinosaurs and Other Reptiles.

Week beginning January 27—Monday, 11 A.M.: Desert Indians; 3 P.M.: Roman Art; Tuesday, 11 A.M.: Implements of War; 3 P.M.: Habitat Groups; Wednesday, 11 A.M.: Petroleum, Peat and Coal; 3 P.M.: Boats and Fishing; Thursday, 11 A.M. and 3 P.M.: General Tours; Friday, 11 A.M.: Moon and Meteorites; 3 P.M.: Fire-making and Cooking Utensils.

Persons wishing to participate in these tours should apply at the North Entrance. The tours are free and no gratuities are to be proffered. A new schedule will be announced each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors are Members who give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and they have the privilege of appointing their successors in perpetuity. Life Members are those who give \$500. They are exempt from dues and enjoy various privileges. Non-Resident and Associate (Life) Members are those who pay \$100; Non-Resident Associate (Life) Members pay \$50. They are exempt from dues and enjoy certain privileges. Sustaining Members contribute \$25 annually. After six years they automatically become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are: Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests during all hours when it is open, and to two reserved seats for all the Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of practically every museum of note in the United States and Canada are extended to all Members of Field Museum.

A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge.

More complete information concerning memberships may be obtained by mailing the coupon below:

To the Director, Field Museum of Natural History,
Roosevelt Road and Lake Michigan,
Chicago, Illinois.

Please send me information concerning membership in
Field Museum.

NAME _____

STREET AND NUMBER _____

POSTOFFICE ADDRESS _____

TELEPHONE NUMBER _____

Field Museum News

Published Monthly by Field Museum of Natural History, Chicago

Vol. 1

FEBRUARY, 1930

No. 2

FOUR NEW AMERICAN MAMMAL HABITAT GROUPS

(Hall 16)

Four striking new groups have been completed and opened to the public in the Hall of American Mammal Habitat Groups. One group is of polar bear shown amid a scene of Arctic snow and ice, this group being a

B. Jones. The fourth group shows musk-ox of the Hudson Bay variety.

Taxidermy on the groups is by Julius Friesser and Arthur G. Rueckert. In the musk-ox group are included



AMERICAN BISON



HUDSON BAY MUSK-OX

gift from Frederick H. Rawson. The second group is of Alaska brown bear, largest of all extant carnivorous animals, and is composed of specimens obtained in 1927

also animals originally mounted by the late Carl E. Akeley. The painted backgrounds are the work of Staff Artist Charles A. Corwin.



POLAR BEAR



ALASKA BROWN BEAR

by the John Borden-Field Museum Alaska-Arctic Expedition, and the Alexander H. Revell-Field Museum Alaska Expedition. The third group is of American bison, and is composed of specimens presented by the late Arthur

The American mammal hall now contains altogether sixteen habitat groups, and work is under way on several more groups which, when finished, will complete the last section of the hall.

Funds Given for Walrus Group

Bruce Thorne of Chicago and George Coe Graves II of New York, who jointly financed and led the Thorne-Graves-Field Museum Arctic Expedition of 1929, have made an additional contribution, in which Henry Graves, Jr., of New York is also participating, of funds to be used towards defraying the cost of preparing a habitat group of the walrus specimens obtained by the expedition.

Work on the group is now under way. The Thorne-Graves Expedition obtained for the Museum also specimens of caribou for another group.

\$10,000 Gift from Martin A. Ryerson

Martin A. Ryerson, First Vice-President of Field Museum, recently made a gift of \$10,000 to the institution. The contribution has been added to the Museum Employees' Pension Fund.

FIELD MUSEUM OF NATURAL HISTORY

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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STEPHEN C. SIMMS	Director and Secretary
SOLOMON A. SMITH	Treasurer and Assistant Secretary

FIELD MUSEUM NEWS

STEPHEN C. SIMMS, <i>Director of the Museum</i>	Editor
<i>Contributing Editors</i>		

BERTHOLD LAUFER	Curator of Anthropology
B. E. DAHLGREN	Acting Curator of Botany
O. C. FARRINGTON	Curator of Geology
WILFRED H. OSGOOD	Curator of Zoology
H. B. HARTE	Managing Editor

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A NEW RECORD

It is extremely gratifying to note that a new attendance record was established at Field Museum of Natural History during 1929, the total number of visitors for the year having been 1,168,430. This was the third successive year in which attendance exceeded one million persons. The increase was 144,803 over 1928, and 124,884 over 1927, the latter year's attendance having been the largest previously attained in the Museum's history.

Other statistics concerning the Museum's activities in 1929 are similarly impressive. The supplementary

educational activities—motion picture programs, story hours, lecture-tours, illustrated extension lectures, *et cetera*—conducted in the schools of Chicago as well as in the Museum itself by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division were participated in by 250,951 school children. The Department of the N. W. Harris Public School Extension continued in full stride its work of circulating traveling exhibition cases illustrating natural history and economic subjects among all the Chicago public schools and many other local institutions. By means of these exhibits, practically all of the city's school children, numbering approximately 500,000, are reached over and over again during the school year.

Twenty-eight illustrated lectures on science and travel, eight of which were presented especially for Members of the Museum, and the rest for the general public, were given in the James Simpson Theatre during 1929, and it is gratifying to note that they drew an aggregate attendance of 33,583 persons. An additional 8,800 adults participated in the lecture-tours of Museum exhibits conducted daily except Saturdays and Sundays.

It is pleasing to note also that 1,363 new names were entered on the Museum's membership rolls during 1929. The total membership on December 31 was 5,684.

Reinstallations in Anthropology

A new type of installation of exhibits has been adopted in the Department of Anthropology, and work is under way to apply it in all the halls. In place of the black screens and black labels with silver printing, buff-colored screens and buff labels with black printing are being installed. The new method has so far been employed in Hall 5, occupied by exhibits representing Indians of the Great Plains, in Hall D, devoted to African ethnology, in the Madagascar collection in Hall E, and in the Arthur B. Jones Malaysian collection in Hall G.

Gifts to the Museum

Following is a list of some of the principal gifts received by the Museum during the past month:

From A. and R. D. Svihla—3 pikas (skins and skulls); from N. M. Heeramaneck—6 cast brass figures from Borneo; from A. W. Bahr—a decorated jade ring of the late Chou period; from Riksmuseets Botaniska Avdelning, Stockholm—618 herbarium specimens from tropical America; from Rockefeller Foundation Fund for Photographing Type Specimens of Plants—1,595 negatives of types in the herbarium of the Botanical Museum, Berlin; from School of Forestry, Yale University—352 herbarium specimens from Liberia; from John R. Millar—15 specimens of fossil plants of the Carboniferous period from Terre Haute, Indiana.

BEQUESTS AND ENDOWMENTS

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, 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,

Cash 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 under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.

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 tax-free and are guaranteed against fluctuation in amount.

A BRIEF HISTORY OF FIELD MUSEUM

By Dr. Oliver C. Farrington, Curator of Geology

(Continued from last month)

Among Chicago's citizens in 1893 none stood higher in the confidence and esteem of the public than Marshall Field. Born in Conway, Mass., in 1835, Mr. Field in early life had come to Chicago. Here he advanced rapidly, until he had largely created and become the head of a great business which occupied a leading place in the city and attained world-wide fame.



Matzene Photo.

MARSHALL FIELD

Mr. Field was known to be favorable to all plans for increasing the cultural and educational facilities of Chicago. Moreover, it was known that any enterprise to which he set his hand would be given wholehearted and permanent support.

Therefore, on October 24, 1893, Edward E. Ayer, a member of the museum association finance committee, who later became the first

President of the Museum and throughout his life remained one of its most ardent and able supporters, called upon Mr. Field and set forth the peculiar opportunity which the World's Columbian Exposition afforded to establish a great museum in the city. He called attention to the fact that no such institution as yet existed in Chicago, and pointed out that the opportunity to create one through the acquisition of exhibits of the exposition was one that should not be allowed to lapse. At the end of the interview Mr. Field remained non-committal but promised to consider the matter. It was evident that he wished to assure himself of the need, importance and desirability of the plan before committing himself to its support. His consideration quickly resulted in a favorable decision, and on October 26 he announced that he would contribute the sum of \$1,000,000 for the establishment of the proposed museum.

The gratification of the committee on receiving this announcement can well be imagined. Every one knew that it meant the success and permanence of a great museum for the city. It is doubtful if, up to that time, any museum had ever received so munificent a gift. As a single gift for museum purposes it shattered all precedents.

The establishment of the Museum thus being assured, other contributors promptly appeared. George M. Pullman and Harlow N. Higinbotham each subscribed \$100,000. Other contributors of funds included Mrs. Mary D. Sturges, the McCormick Estate, P. D. Armour, Martin A. Ryerson, R. T. Crane, A. A. Sprague and many other leading citizens. Their contributions, together with donations of exposition stock, totaled nearly one-half million dollars by the end of the following year.

These funds enabled purchases to be made of large collections or important exhibits that had been shown at the exposition. Such purchases included those of the Ward natural history collection, the Tiffany collection of gems, the collection of pre-Columbian gold

ornaments, the Hassler ethnological collection from Paraguay, collections representing Javanese, Samoan and Peruvian ethnology, and the Hagenbeck collection of about 600 ethnological objects from Africa, the South Sea Islands, British Columbia, *et cetera*.

A spirit of generous cooperation was aroused on all sides, and donations of exhibits and collections of great value were received in large numbers. Mr. Ayer presented his large anthropological collection, chiefly devoted to the ethnology of the North American Indian. The Museum acquired by purchase and by gift almost all of the extensive collections made by the department of anthropology of the exposition. The technical and special collections made by the department of mines, mining and metallurgy of the exposition were presented, together with the exhibition cases, as were also collections from 130 exhibitors in the same department. From exhibitors in the agriculture, forestry and manufactures departments of the exposition collections of timbers, oils, gums, resins, fibers, fruits, seeds, and grains were contributed in so large quantity and variety as to insure for the first time in any general natural history museum the formation of an adequate department of botany.

(To be continued next month)

RAYMOND PROGRAMS FOR CHILDREN

The James Nelson and Anna Louise Raymond Public School and Children's Lecture Division of Field Museum will present a special Lincoln's Birthday program of motion pictures for children in the James Simpson Theatre of the Museum on Wednesday morning, February 12. The film, "Abraham Lincoln," including six reels illustrating episodes in the life of the martyred President, will be shown. There will be two performances, one at 10 A.M. and one at 11. Admission is free.

The regular spring series of Raymond Fund free entertainments for children on Saturday mornings at 10 and 11 o'clock will begin on February 22, when, to mark George Washington's Birthday, films will be shown of Washington's life and episodes of the American Revolution. The films are "Gateway to the West" and "Yorktown," of the Yale University "Chronicles of America" series, presented to the Museum by the late Chauncey Keep.

On March 1 the program will consist of five moving pictures, as follows: "Across St. Gothard's Alps," "A Fossil Cycad," "Making Cement," "Fish and Fowls," and "Mollusks."

On March 8 the motion pictures "Glimpses of Japan" and "Old Moose Trails" will be presented.

Announcement of subsequent entertainments in this series will appear in the March issue of FIELD MUSEUM NEWS.

New Animal Mummy Exhibits

A new exhibit of mummified birds, and another of mummies of other animals with coffins provided for some of them, have been added to the collections in Hall J, devoted to Egyptian archaeology. The bodies of animals were preserved by the Egyptians for three reasons. First, certain animals had religious significance by their association with various ancient Egyptian deities. Second, animals often were placed in the graves of dead human beings as food offerings. Third, animals which had been pets were occasionally buried with their master or mistress for sentimental reasons.

SATURDAY AND SUNDAY LECTURES

"Sea Hawks" is the title of a special lecture, illustrated with motion pictures, to be given for Members of the Museum on Sunday afternoon, February 9, at 3 o'clock, in the James Simpson Theatre of the Museum. Captain C. W. R. Knight of London, England, is the lecturer. Each Member of the Museum is entitled to two seats, to obtain which he should show his **membership card** to an attendant at the theatre on the afternoon of the lecture. Upon presentation of the card Members will be given two tickets of admission to the reserved section of the theatre. Seats in the reserved section which have not been claimed by 3 P.M. will be offered to the public.

The Museum's fifty-third free lecture course for the public, consisting of ten illustrated lectures on science and travel, to be given in the James Simpson Theatre on Saturday afternoons at 3 o'clock, will begin March 1. "Australian Aborigines" is the subject to be presented on that date, and Captain Kilroy Harris of the British Army will be the lecturer.

On March 8 a lecture on "Bali, Borneo and Sumatra" will be given by H. C. Ostrander, of Yonkers, New York.

Announcement of subsequent lectures in this series will appear in the March issue of FIELD MUSEUM NEWS.

NEW MEMBERS

The following persons were elected to membership in Field Museum during the period from December 11, 1929, to January 17, 1930:

Life Member

Mrs. Jacob Baur

Associate Members

Benjamin F. Affleck, Shreve Cowles Badger, Mrs. Lawrence N. Burke, Frank Cernoch, Dr. Mark T. Goldstine, John V. D. Harms, Dr. William H. Hazlett, John W. Hughes, Gordon E. Keogh, Mrs. Arthur G. Kingman, Dr. Wolff Kritchevsky, Benjamin Franklin Langworthy, Frank J. Mackey, Theodore S. Mayer, William M. McMillan, Frank W. Marzluff, William Meyer, William Morris Morton, Paul A. Neuffer, Lester E. Pennington, Dr. Nelson Mortimer Percy, Mrs. Arthur Raff, Clarence W. Sills, Jacob Sonneveld, Miss Mary B. Staley, James E. White, Irving Winter, Harry B. Wyeth, George W. Young.

Sustaining Members

Mrs. Bryan Lathrop, Mrs. Edward Lewis, E. E. Peter, Shepard M. Roberts, Benjamin J. Rosenthal, Charles S. B. Smith, Sr.

Annual Members

Edward H. Bean, Mrs. M. H. Bent, H. H. Blatchford, Jr., Mrs. C. E. Bolles, Melburn Brant, Mrs. Herbert A. Byfield, Frank G. Cooban, Harry C. Courson, Mrs. S. B. Cramer, George B. Cross, Robert Cunningham, Maulsby Forrest, Dr. Solomon B. Freehof, Mrs. Edith E. Friedrichs, J. R. Glass, Mrs. Scott R. Hamilton, Mrs. Rose Hanskat, Henry G. Hardy, Mrs. M. Hausler, Jr., Dr. A. Heym, Miss Lyle A. Highley, Mrs. Rufus M. Hitch, Mrs. C. E. Jarchow, C. Edward Johnson, Mrs. E. G. Johnson, Harry T. Johnson, Mrs. Bruce Johnstone, Dr. Maximilian Kern, J. M. King, Dr. Sumner Koch, Lionel London, Frank Manegold, Edwin H. Manasse, Miss Ruth H. Matz, Mrs. Michael McDonnell, Mrs. C. R. McDougall, Mrs. Edward G. McDougall, W. O. McKinney, Mrs. F. W. Mengden, Dr. Samuel J. Meyer, Dwight L. Mink, Mrs. B. V. Newcomb, Mrs. Walter A. Olsen, Mrs. W. Patch, William J. Pattison, Charles E. Peace, Mrs. G. J. Pope, Mrs. Lee W. Porter, Oliver J. Prentice, Mrs. Charles E. Pyncheon, David H. Quinn, Mrs. Arthur W. Reebie, George H. Reynolds, Mrs. H. J. Reynolds, Mrs. J. H. Rhodes, W. E. Rhodes, Mrs. Oscar Robson, Mrs. W. L. Rosenthal, Dr. Loren D. Sayre, Rockwell Sayre, Philip W. Schimmel, C. A. Schneider, Mrs. E. C. Schoellkopf, Mrs. R. A. Schoenfeld, David H. Scholl, H. R. Schradzki, Mrs. Charles A. Schreiner, Dr. Mary G. Schroeder, August F. Schroeder, Dr. Otto Schwartz, Mrs. John Sefton, Mrs. Emma Seifert, Mrs. Joseph J. Selig, Mrs. O. R. Sellers, Miss Julia M. Selover, Henry P. Shaw, Mrs. Henry P. Shaw, Mrs. Wilfred M. Smith, Mrs. R. W. Spindler, Mrs. Clyde G. Stevens, Charles W. Stiger, Robert F. Trumbull, Frank Edward Wilhelm, R. F. Wilson, M. P. Woodruff.

FEBRUARY GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during February:

Week beginning February 3—Monday: 11 A.M., Gems and Jewelry, 3 P.M., The Eskimos; Tuesday: 11 A.M., Water Plants, 3 P.M., Coal and Iron; Wednesday: 11 A.M., Egypt, 3 P.M., Horses—Past and Present; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Bird Families, 3 P.M., Illinois Industries.

Week beginning February 10—Monday: 11 A.M., Cereals and Spices, 3 P.M., Indian Homes; Tuesday: 11 A.M., Skeletons, 3 P.M., The Art of the Ancients; Wednesday: 11 A.M., Indian Costumes, 3 P.M., Chicago Mammals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Chinese Archaeology, 3 P.M., Boat Models and Boats.

Week beginning February 17—Monday: 11 A.M., Java and Sumatra, 3 P.M., Cats and Dogs; Tuesday: 11 A.M., Primitive Weapons, 3 P.M., Uses of Furs and Feathers; Wednesday: 11 A.M., South American Animal Life, 3 P.M., Farmer Indians; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Prehistoric Animals, 3 P.M., Japanese Art.

Week beginning February 24—Monday: 11 A.M., The Philippines, 3 P.M., African Animals; Tuesday: 11 A.M., Bird Homes, 3 P.M., Early Man; Wednesday: 11 A.M., Fish and Reptiles, 3 P.M., Italian Archaeology; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., American Mammals, 3 P.M., Musical Instruments.

Persons wishing to participate in these tours should apply at the North Entrance. The tours are free and no gratuities are to be proffered. A new schedule will be announced each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

Trustees' Annual Meeting

At the Annual Meeting of the Board of Trustees of Field Museum of Natural History, held Monday, January 20, all of the Officers who served during 1929 were re-elected for 1930. George A. Richardson was elected as a Member of the Board of Trustees, and was also elected a Corporate Member of the Museum.

This will be President Stanley Field's twenty-second year at the head of the Museum's administrative organization, as he has held the presidency continuously since his first election to that office in January, 1909.

Mahogany Exhibit

An exhibit showing mahogany tree branches with their foliage and fruits, and also finished planks of three species of American mahoganies, has been placed on view in Stanley Field Hall.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors are Members who give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and they have the privilege of appointing their successors in perpetuity. Life Members are those who give \$500. They are exempt from dues and enjoy various privileges. Non-Resident and Associate (Life) Members are those who pay \$100; Non-Resident Associate (Life) Members pay \$50. They are exempt from dues and enjoy certain privileges. Sustaining Members contribute \$25 annually. After six years they automatically become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are: Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests during all hours when it is open, and to two reserved seats for all the Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of practically every museum of note in the United States and Canada are extended to all Members of Field Museum.

A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge.

Further information concerning memberships will be sent on request.

Field Museum News

Published Monthly by Field Museum of Natural History, Chicago

Vol. 1

MARCH, 1930

No. 3

TAMED DEER IN ANCIENT TIMES

By Dr. Berthold Laufer, Curator of Anthropology

In archaeological excavations many objects wrested from the soil are not clearly recognizable at first. Clay figures and pottery often are encrusted with hardened layers of earth which hide their shape or designs. Metal objects are sometimes so disfigured by chemical action of the soil and moisture that identification seems almost hopeless. But after receiving "first aid" in the field, such objects are treated in the Museum laboratory by chemical and electrical processes which usually insure their complete recovery.

Many a thrill is experienced when a shapeless mass of metal gradually reveals its original form, or when a beautiful design or an inlay of precious stones or gold suddenly appears after removal of a malignant patina. Such a resurrection was recently witnessed at Field Museum when a copper rein ring from Kish, received from last season's excavations of the Field Museum-Oxford University Joint Expedition to Mesopotamia,



KISH REIN RING WITH FIGURE OF STAG

was properly cleaned and unexpectedly revealed the full figure of a stag crowned with branching antlers.

The surprise was twofold. Copper rein rings were known from Kish heretofore, but the previous ones were surmounted by the figure of a species of Equidae or simply by metal loops for the reins. In this case the figure was an unsuspected member of the Cervidae, and a long and heavy rope from the animal's muzzle indicates that stags must have been captured alive and tamed by the early Sumerians. This is the most ancient hint of the taming of stags that has come either from Mesopotamia or elsewhere. The stratum in which this object was discovered dates it to about 3500 B.C.

Hydraulic Excavation

An innovation in archaeological work—the application of modern hydraulic engineering methods—has been undertaken at Kish, reports L. C. Watelin, field director of the expedition. A large motor-driven pump, connected with extensive pipe-lines installed over a large area of the city site, has been put into operation to clear away the huge volumes of subterranean water encountered about fifty feet below the present-day water-level. When this has been pumped away the excavators will be able to continue their investigations into the lowest depths yet attempted. A few evidences of a neolithic culture have already been found in the lower strata.

MARSH DEER GROUP NOW ON VIEW

Another exhibit in the Hall of American Mammal Habitat Groups (Hall 16) has been completed and is open to the public. It shows the marsh deer, largest of all South American deer, in a scene typical of its natural environment. The specimens were obtained by the Marshall Field Brazilian Expedition. They include an adult male and female, an immature pair, and a fawn about ten months old.

The marsh deer has long legs because of its life in the swamp lands along the Paraguay and Parana Rivers and their tributaries. It is extensively hunted for its hide, which makes good leather. The males, which have large antlers, are regarded as sacred by the Indians in some parts of the animals' range. The young are born singly, and only one each year to the parents. Fire-crowned tyrants, birds related to the kingbird, generally accompany the marsh deer for the insects disturbed or attracted by it.

The scene represented in the Museum group is on the Descalvados Ranch in southwestern Brazil. Taxidermy



MARSH DEER GROUP (Hall 16)

on the group is by Leon L. Pray of the Museum Staff, and the background is the work of Staff Artist C. A. Corwin.

\$2,500 Gift from Mrs. James Nelson Raymond

Mrs. James Nelson Raymond, founder of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division of Field Museum, has contributed another \$2,500 to be used in carrying on the educational work of the Division. Mrs. Raymond established this important Division of the Museum in 1925 when she provided an endowment of \$500,000, and since then she has made frequent additional contributions.

Educational picture card sets for school children are published by the Museum.

FIELD MUSEUM OF NATURAL HISTORY

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

STEPHEN C. SIMMS, *Director of the Museum*..... *Editor*
Contributing Editors

BERTHOLD LAUFER..... *Curator of Anthropology*
B. E. DAHLGREN..... *Acting Curator of Botany*
O. C. FARRINGTON..... *Curator of Geology*
WILFRED H. OSGOOD..... *Curator of Zoology*
H. B. HARTE..... *Managing Editor*

Field Museum is open every day of the year as follows:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

In the Museum is a cafeteria where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members should inform Museum promptly of changes of address.

THE MUSEUM'S PLANS FOR 1933

Members of Field Museum will be interested to know what part the institution may be expected to play in connection with Chicago's Century of Progress Exposition in 1933. The Museum undoubtedly will be one of the chief attractions for out-of-town visitors to the exposition. It is located along what will probably be one of the main gateways to the exposition grounds, and it may be expected that almost everyone attending the exposition will also visit the Museum.

In view of this, the energies of the Museum Staff are now being directed toward completing all exhibition material now in the course of preparation, installing and

opening all halls not yet occupied by exhibits, and revising and reinstalling as many of the present exhibits as can be improved. This is a tremendous task, due to the unprecedented amount of expeditionary work which has been carried on in the last few years, resulting in a flood of enormous new collections requiring preparation. However, the program is now well under way, and there is every indication that it will be possible to complete the work before or by 1933.

RAWSON AFRICAN EXPEDITION RETURNING

The Frederick H. Rawson-Field Museum Ethnological Expedition to West Africa has completed its work in Angola (Portuguese West Africa) and Nigeria (British West Africa), and it was on its way back to Chicago with extensive collections at the time of going to press.

The expedition had collected vast amounts both of exhibition and study material representing a great many tribes of which little scientific knowledge had previously been available, Assistant Curator W. D. Hambly, the leader, reported. More than 10,000 miles were traversed in performing the expedition's work. In addition to collecting artifacts, the expedition made still and motion pictures of natives engaged in many occupations, took dictaphone records of their languages, and collected various other data for scientific reports.

SAGO PALM EXHIBIT INSTALLED

An enormous cluster of fruits of the sago palm, obtained by the Marshall Field Brazilian Expedition, has been added to the exhibits in the Hall of Plant Life (Hall 29). Such clusters represent the largest bunches of fruits known, even among the palms. The Museum's specimen is about eight feet long, and weighed more than 600 pounds when green. Upon it are thousands of characteristic scaly, shiny fruits, which have been preserved in perfect condition.

Gifts to the Museum

Following is a list of some of the principal gifts received by the Museum during the past month:

From Lee Ling Yün—a gilt bronze statuette of a standing Buddha, Sung period (twelfth century), China; from Fred N. Peet—a decorated birch bark vessel of the Cree Indians, Ontario, Canada; from William J. Chalmers—6 specimens of crystallized gold; from Honore Palmer and John Wentworth—55 African mammal skins, scalps and skulls; from Dr. Will J. Cameron—3 rare lizards from the Namib Desert, southwest Africa; from Arthur G. Rueckert—1 hawk owl from Chicago; from the General Biological Supply House—2 rare eels from Florida; from William A. Schipp—120 herbarium specimens from British Honduras; from Direccion General de Agricultura, Guatemala—133 herbarium specimens from Guatemala; from Frank Vondrasek—90 specimens of gems, minerals, arrowheads and spear-points.

BEQUESTS AND ENDOWMENTS

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, the following form is suggested:

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A BRIEF HISTORY OF FIELD MUSEUM

By Dr. Oliver C. Farrington, Curator of Geology

(Continued from last month)

On January 22, 1894, the Board of Trustees of the Museum formed a permanent organization. Edward E. Ayer was chosen President, and Frederick J. V. Skiff, who had been chief of the department of mining and metallurgy of the World's Columbian Exposition, was appointed Director of the Museum.

Since the closing of the exposition made it necessary to evacuate most of the buildings, it became imperative to transfer such of their contents as had been assigned to the Museum to some more or less permanent location. As it was not possible in the limited time available to construct a building for this purpose, the Palace of Fine Arts of the exposition became such a repository. As soon as space could be obtained the varied objects which had been received were assembled there. The arrangement of these was, of course, tentative at first.

Since the scope and function of the Museum had not yet been fully outlined, the Trustees decided not to limit them within narrow boundaries at the beginning. Material illustrative of the natural sciences—anthropology, botany, geology, and zoology—had become available in considerable quantities. There were also obtained a sufficient number of exhibits along other lines to enable divisions of industrial arts, transportation and the railway, and a Columbus Memorial to be organized.

The transfer of all these materials and their assembling and arrangement into instructive and attractive series was a great and difficult task. The exposition buildings had been constructed for a summer's use only and hence were without heat, light or other facilities for winter work. The removal of exhibits and their installation in museum form was therefore carried on under a considerable handicap, but nevertheless with characteristic Chicago enterprise and energy.

Experts from the exposition staff and individuals with museum training from other institutions were called in to assist in the work of organizing and installing the exhibits. Among those who participated and the work they undertook were: Dr. Franz Boas of Clark University, anthropology; Dr. C. F. Millspaugh of the West Virginia Commission, botany; V. C. Heikes of the Colorado Commission and Dr. O. C. Farrington of the United States National Museum, geology; F. C. Baker of the Rochester Academy of Sciences, zoology; J. E. Watkins of the United States National Museum, industrial arts; Willard A. Smith of Chicago and J. G. Pangborn of Baltimore, transportation and the railway; J. E. Webster, the Columbus Memorial, and E. L. Burchard of the department of mines of the exposition, the library.

On May 21, 1894, the Trustees voted, in recognition of the founding of the Museum by Marshall Field, to change the name "The Columbian Museum of Chicago," under which it had been incorporated, to "Field Columbian Museum."

By this time it was felt that the installation of exhibits in the Museum was sufficiently advanced to permit opening its doors to the public and dedicating the Museum to its future task. Saturday, June 2, 1894, was the date chosen, and on the afternoon of that day between eight and ten thousand persons assembled at the north steps of the institution to witness the opening ceremonies. Mr. Field and members of the Board of Trustees received a number of invited guests and members of the Museum Staff in a hall of the building, and then appeared on a

platform in front of the building. An address recounting the history of the enterprise was given by Director Skiff. Another on "The Message of the Museum to Chicago and the World" was delivered by Edward G. Mason. At the close of these addresses there were calls for Mr. Field, who acknowledged them by rising and bowing amid the applause of the audience. President Ayer then declared the Museum open.

(To be continued next month)

RAYMOND PROGRAMS FOR CHILDREN

Nine free motion picture entertainments for children, provided by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division of Field Museum, will be given on Saturday mornings during March and April in the James Simpson Theatre of the Museum. There will be two showings of each, one at 10 A.M. and one at 11. Following is a complete schedule:

March 1—Across St. Gothard Alps, A Fossil Cycad, Making Cement, Fish and Fowls, Mollusks.

March 8—Glimpses of Japan, and Old Moose Trails.

March 15—The Doings of "Turp" and "Tine," Strip Mining, 20,000 Leagues Under the Sea, Among the Naskapi Indians.

March 22—Transportation Through the Ages, Bedouins in the Sahara, Jewels of Industry, Whistling Swans.

March 29—Story of Paper and Printing, Romance of Rayon, The Rook.

April 5—Persimmons in China, Magic Yellowstone, Knights of the Air, The Ant, Our Spring Birds.

April 12—King of the Rails, Wireless, The Butterfly, Our Spring Wild Flowers.

April 19—Getting Canada's Goat, Edison, the Wizard, Lions and Other African Animals.

April 26—Daniel Boone (film presented by the late Chauncey Keep), The Grand Canyon, A Baby Bear.

Children from all parts of Chicago and suburbs are invited to attend these entertainments.

BANANA WAIFS

By Karl P. Schmidt, Assistant Curator of Reptiles

Field Museum frequently receives inquiries about strange snakes or spiders found in bunches of bananas. The animals most frequently reported are spiders. These are usually thought to be "tarantulas" and regarded as extremely poisonous.

A bunch of bananas affords such excellent shelter for tropical spiders and cockroaches that it is not surprising a few individuals become stowaways for the long journey from Central America.

It is more startling to find larger animals, even less familiar in Chicago, traveling here by the same means. One or more juvenile boa constrictors turns up in Chicago every year. These are also usually thought to be venomous, but in reality are the most harmless of snakes. A green tree frog arrived in bananas on one occasion. Two kinds of geckos, or tropical lizards, have also reached Field Museum from this source. Most remarkable of all is the rather frequent occurrence of the little mouse opossum, an especially interesting creature if it happens to be a female accompanied by a litter of young which cling to their mother by means of their grasping feet and prehensile tails, after they have outgrown her pouch.

Such "accidental" spreading of animals throws light upon the possibility of fortuitous dispersal of animals under natural conditions. Floating vegetation of various sorts, acting as a means of transport, seems to afford the best explanation of the varied and erratic combinations of animal forms found on remote oceanic islands.

NEW LECTURE COURSE BEGINS MARCH 1

The Museum's fifty-third free lecture course will begin on March 1. Nine lectures on science and travel by eminent explorers and naturalists, illustrated with motion pictures and stereopticon slides, will be included in the series. The lectures will be given on successive Saturday afternoons during the spring, in the James Simpson Theatre of the Museum. All lectures will begin at 3 P.M. Admission is free.

Following is the complete schedule of dates, subjects and speakers in this course:

- March 1**—Australian Aborigines
Captain Kilroy Harris, D.S.O., F.R.G.S., Cleveland, Ohio
- March 8**—Bali, Borneo and Sumatra
Mr. H. C. Ostrander, Yonkers, New York
- March 15**—Himalayan Exploration
Captain John B. Noel, London
- March 22**—Tracking Down the Enemies of Man
Dr. Arthur Torrance, F.R.S., New York
- March 29**—To New Guinea for Living Birds of Paradise
Mr. Lee Crandall, Curator of the New York Zoological Park
- April 5**—Bird Enchantment
Mr. T. Walter Weiseman, Lakewood, Ohio
- April 12**—The Wonderland of Plants
Mr. A. C. Pillsbury, Berkeley, California
- April 19**—A Naturalist in the South Seas
Mr. Karl P. Schmidt, Assistant Curator of Reptiles, Field Museum of Natural History; leader of the scientific section of the Cornelius Crane Pacific Expedition for Field Museum, 1928-29
- April 26**—Indian Cultures of the Southwest
Dr. Paul Martin, Assistant Curator of North American Archaeology, Field Museum of Natural History

NEW MEMBERS

The following persons were elected to membership in Field Museum between January 17 and February 15:

Associate Members

Raymond M. Ashcraft, Joseph C. Belden, P. G. Connell, Mrs. Wallace L. Cook, Thomas Gerrity, Melvin L. Griffith, Clarence W. Jameson, George N. Kotin, Mrs. John Matter, Mrs. Clifford Off, Mrs. Isabelle Segersten Pinter, Mrs. W. A. Radford, Jr., Mrs. Earl Reeve, Miss Annie T. Rogers, William M. Rosenfield, Mrs. Margit Hochsinger Roth, Paul S. Russell, William A. Sauer, Richard W. Sears, Jr., F. P. Schneider, S. Schreiner, Mrs. George C. Wieland, Mrs. Harold F. Wood, Charles F. Zerler.

Sustaining Members

Miss Jessie H. Rankin

Annual Members

B. E. Arntzen, Sigard E. Berg, Mrs. Peter Berkey, Charles W. Brown, Theodore C. Browne, Dr. Fremont A. Chandler, Louis Cook, William L. Dawson, Louis H. Debs, Rudolph Deutschmann, Miss Marie Dolese, Paul Drymalski, Frank I. Ellis, Victor Elting, Harold Engstrom, Albert D. Farwell, Wade Fetzer, Jr., G. W. Funk, Joseph X. Galvin, Mrs. George F. Gates, Mrs. F. E. Gehm, Mrs. Harold J. Gordon, Harry M. Hart, Henry S. Henschen, Edward J. Hess, Mrs. W. T. Hicks, Mrs. Curtis M. Hinman, Mrs. William Hoch, Charles H. Hollenbach, William H. Howard, Michael G. Human, Mrs. Theodore F. Husmann, Mrs. Edward Hymers, Howard K. Jackson, Benjamin E. Jaffe, Frank H. Janis, Frank S. Jannotta, J. E. Jannotta, Mrs. Clarence A. Johnson, Dr. Jay G. Jones, Mrs. Grace G. King, John Andrews King, Edward Kleinschmidt, Mrs. A. LeDuc, Mrs. Edward F. Lutz, Mrs. Estelle T. Loeb, William I. Lyon, Mrs. David John MacGregor, Mrs. C. W. McLaury, Howard F. Meyer, M. Glen Miller, Maxwell P. Miller, Heaton Owsley, Clifford Parker, Mrs. Samuel P. Parmly, Mrs. H. H. Patterson, Mrs. C. E. Pierce, Mrs. Charles L. Powell, Dr. F. A. Purcell, Mrs. E. Puttkammer, C. E. Raymond, Walter S. Reed, Mrs. Henry Reeves, Miss Vera Reynolds, Mrs. Elmer Lamont Rhoades, Mrs. Addie R. Richardson, Miss Emily J. Riddiford, Mrs. L. R. Rigali, Miss Lucy F. Righeimer, Seth B. Roberts, Mrs. A. F. Robinson, F. E. Roper, Mrs. Morris Rosenbach, W. L. Runzel, Sr., Miss Thyra J. Ruth, Miss Margaret E. Ryan, Mrs. Herbert E. Rycroft, Mrs. E. Santschi, Dr. Harriet E. Saxmann, Mrs. G. F. Schad, Miss Harriet N. Schrader, Mrs. Frank J. Schramka, George H. Scott, G. Leland Seaton, Mrs. William B. Seifert, Dr. F. H. Seubold, Elmer Toohey.

MARCH GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during March:

Week beginning March 3—Monday: 11 A.M., Native Trees, 3 P.M., Objects of Warfare; Tuesday: 11 A.M., Systematic Birds, 3 P.M., Dwellers in the Far North; Wednesday: 11 A.M., Palms and Grasses, 3 P.M., Porcelain, Pewter and Cloisonné; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Deer and Antelopes, 3 P.M., Madagascar Exhibits.

Week beginning March 10—Monday: 11 A.M., Osteology Hall, 3 P.M., Gems and Oriental Jewelry; Tuesday: 11 A.M., Dinosaurs and Other Reptiles, 3 P.M., Melanesia; Wednesday: 11 A.M., Birds of Shore and Swamp, 3 P.M., Clays and Their Uses; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Ores and Crystals, 3 P.M., Egyptian Tombs and Burial Customs.

Week beginning March 17—Monday: 11 A.M., Work of Wind and Water, 3 P.M., China; Tuesday: 11 A.M., Animals of Plain and Desert, 3 P.M., Ancient Kish; Wednesday: 11 A.M., Indians of the Chicago Region, 3 P.M., North American Fur-bearers; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Charms and Amulets, 3 P.M., Sea Life—Past and Present.

Week beginning March 24—Monday: 11 A.M., Man Through the Ages, 3 P.M., Birds of Prey; Tuesday: 11 A.M., Art of Primitive Peoples, 3 P.M., Papers of Many Kinds; Wednesday: 11 A.M., Rodents, 3 P.M., Primitive African Peoples; Thursday: 11 A.M., and 3 P.M., General Tours; Friday: 11 A.M., Egypt, 3 P.M., Roman Archaeology. Monday, March 31: 11 A.M., Japan, 3 P.M., Rare Animals.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

CHANCELLOR AND STUART RETURN

The Chancellor-Stuart-Field Museum Expedition to the South Pacific has returned to this country with important collections for the Department of Zoology. Outstanding among the specimens obtained, according to the last report, are two excellent representatives of the giant lizards of Komodo, Dutch East Indies (*Varanus komodoensis*); two reticulated pythons (largest reptile known to science) from Borneo, each twenty-six feet long, together with a clutch of eighty-one of their eggs; two Tuatua lizards, three Java ring lizards, three Kiwi birds, three Indian pythons (*Python molurus*), two Victoria Regia crown pigeons, and a number of fish from Sumatra.

The expedition worked in Australia and New Zealand as well as in the Dutch East Indies. Philip M. Chancellor of Santa Barbara, California, was both sponsor and leader of the expedition. Associated with him as co-leader was Norton Stuart, naturalist, also of Santa Barbara.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and may appoint their successors in perpetuity. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$100; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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No. 4

RAWSON EXPEDITION RETURNS WITH 2,000 SPECIMENS

By WILFRID D. HAMBLY

Assistant Curator of African Ethnology, and Leader of Frederick H. Rawson-Field Museum Ethnological Expedition to West Africa

The Frederick H. Rawson-Field Museum Ethnological Expedition to West Africa has returned to Chicago after nearly a year in the field. Work was conducted in two regions which are geographically and ethnologically distinct—Angola (Portuguese West Africa), a region which anthropologists had studied less than any other part of the continent, and Nigeria (British West Africa), together with French Niger Territory. Approximately 2,000 objects were collected, including good examples of wood carving, leather products, articles fashioned from iron, brass and silver, and implements of warfare, domestic work and magical rites. Included also are series of objects illustrating stages in the manufacture of these products.

About 800 still pictures were taken of the country, racial types and industrial processes. Also, several thousand feet of motion pictures were made of native dances, ceremonies and manufacturing. Data were obtained for

the construction of proposed life-size groups, including one showing the native blacksmith's craft.

The most important result is a scientific report which is to be prepared on the ethnology of the Ovimbundu of Angola. Research was conducted into every department of tribal life. Arts and handicrafts, agriculture, fishing, social organization and magical rites were subjects of a large part of the inquiry. Fifty adult males were measured, and the data obtained, in combination with numerous photographs, provide a most useful record for studies in physical anthropology. The grammar and vocabulary of the Umbundu language were recorded. A dictaphone was used to record speech, singing and drum music.

In addition to ethnological material, a collection of about 150 skins of small mammals, lizards and snakes was obtained for the Department of Zoology.

More than 10,000 miles of African territory were traversed, traveling being done chiefly in a motor lorry under arduous circumstances. Great difficulties were encountered in crossing rivers, passing over stretches of deep sand, and avoiding flooded areas.

TWO NEW MURALS IN GRAHAM HALL

Two more of the large mural paintings of prehistoric life in the series being prepared for Ernest R. Graham Hall of Historical Geology have been completed and placed on exhibition. One of them, nine by eleven feet in dimensions, shows two great cave bears—which were contemporary with early man—emerging from a cavern overlooking a river valley of the late Ice Age. The other, nine by twenty-five feet, shows groups of various animals which lived about twenty million years ago in what is now Nebraska. The animals are the Parahippus, an early species of small three-toed horse; the *Oxydactylus* or extinct North American camel; the *Diceratherium*, a small species of prehistoric two-horned rhinoceros; the *Dinohyus*, a huge extinct pig-like animal; and the *Moropus*, a grotesque creature with a body something like a horse, head and teeth resembling those of a rhinoceros, and feet with claws for digging—the last most unusual in combination with the other characteristics of this animal.

With the installation of these paintings the total number of the series placed on exhibition to date is eighteen. Ten more are still to be prepared. The series is a gift from Ernest R. Graham, and is being executed by the well-known painter of paleontological subjects, Charles R. Knight of New York. Subjects of the other sixteen paintings placed on exhibition to date are: A Cooling Earth; The Beginnings of Life; An Early Sea Beach; The Chicago Coral Reef; An Armored Dinosaur; Egg-laying Dinosaurs of the Gobi Desert; *Tyrannosaurus* and *Triceratops*; The Moa; The Giant Kangaroo; The Mastodon; The Giant Irish Deer; Northern Mammoth; Great Ground Sloths and Glyptodonts; The *Apatosaurus*; The *Zeuglodon*; and Flying and Swimming Reptiles.

SATURDAY LECTURES IN APRIL

Four lectures in the Museum's fifty-third free lecture course remain to be given on Saturday afternoons during April. The speakers will be eminent explorers and naturalists, and their lectures will be illustrated with motion pictures and stereopticon slides. Following are the dates, subjects and speakers:

April 5—Bird Enchantment

T. Walter Weisman, Lakewood, Ohio

April 12—The Wonderland of Plants

A. C. Pillsbury, Berkeley, California

April 19—A Naturalist in the South Seas

Karl P. Schmidt, Assistant Curator of Reptiles, Field Museum of Natural History; leader of the scientific section of the Cornelius Crane Pacific Expedition for Field Museum, 1928-29

April 26—Indian Cultures of the Southwest

Dr. Paul Martin, Assistant Curator of North American Archaeology, Field Museum of Natural History

All lectures begin at 3 P.M., and are given in the James Simpson Theatre of the Museum. Admission is free.

Rare Lizards Received

Three rare African geckos or lizards, one of them equipped by nature with a broad shovel-like snout for digging in the sand, one with fringed toes designed to produce the same effect as anti-skid chains on an automobile tire, and one with web feet, have been presented to the Museum by Dr. Will J. Cameron of Chicago. This is the second gift resulting from Dr. Cameron's activities on the recent Cameron-Kadle Kalahari Desert Expedition. He had previously presented two other specimens of the web-footed species. The lizards are of kinds represented in few if any other museums of the world. Colored like the desert sand, they are in their native habitat practically invisible to any except the most observant eyes.

FIELD MUSEUM OF NATURAL HISTORY

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

STEPHEN C. SIMMS, *Director of the Museum*.....*Editor*
Contributing Editors

BERTHOLD LAUFER.....*Curator of Anthropology*
B. E. DAHLGREN.....*Acting Curator of Botany*
O. C. FARRINGTON.....*Curator of Geology*
WILFRED H. OSGOOD.....*Curator of Zoology*
H. B. HARTE.....*Managing Editor*

Field Museum is open every day of the year as follows:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

In the Museum is a cafeteria where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members should inform Museum promptly of changes of address.

SPRING

The arrival of spring brings the reminder that Field Museum is equipped to render special services at this time of the year to its Members and to the general public. For those who contemplate jaunts into the country surrounding Chicago, or who are planning trips into natural wonderlands at greater distance, a visit to the Museum previous to starting will be profitable. The nature lover will find among the exhibits specimens and data of value when he wishes to identify flowers, trees, birds, animals and rocks which occur on the trails he follows into the wilds.

Among halls of the Museum containing exhibits of particular value for this purpose may be mentioned the Hall of Plant Life (Hall 29); Charles F. Millsbaugh Hall

(Hall 26), devoted to North American trees; Hall 21, containing the systematic bird collections, where special attention has been given to North American birds, while those occurring in Illinois are especially marked with a red star; Hall 20, containing eighteen habitat groups of birds, chiefly North American, and including several of the Chicago region; Hall 15, containing the systematic collection of mammals, including a special case of mammals of the Chicago area; Hall 17, which contains a case devoted to the insect life of the Indiana sand dunes; Albert W. Harris Hall (Hall 18), containing fishes and reptiles; and Clarence Buckingham Hall (Hall 35), containing among many other things a group of relief maps of the region about Chicago. In these halls is found material especially of value to the person who will confine his journeys to the near home territory. Many other halls offer similar assistance to the traveler who plans more distant trips.

Gilded Buddha Dedicated to Field Museum

In 1923, when Dr. Berthold Laufer, Curator of Anthropology, was in China as leader of the Marshall Field Expedition to that country, he formed a close acquaintance with Lee Wan Ching, prominent art dealer of Shanghai. Recently the merchant died in a Chicago hospital. His son, Lee Ling Yun, of Shanghai and New York, has dedicated to Field Museum in his father's memory a valuable solid bronze figure of a standing Buddha. It is gilded, and dates back to the twelfth or thirteenth century A.D. Thus the young Chinese in America is performing through the Museum an act of filial piety based on ancient traditions, which, if he were in his own country, would have been done by dedicating such a votive image to one of the ancient temples of the home land.

Associate Curator Hellmayr Honored

Dr. C. E. Hellmayr, Associate Curator of Birds at Field Museum, has been awarded the Megaud d'Aubusson gold medal by the Société Nationale d'Acclimatation de France; for his meritorious work on South American birds. Recently Dr. Hellmayr was also awarded the Brewster Medal by the American Ornithologists' Union.

Gifts to the Museum

Following is a list of some of the principal gifts received by the Museum during the past month:

From Haskell Museum, Oriental Institute, University of Chicago—14 predynastic pottery jars, Egypt; from Mrs. William H. Moore—1 green jade brush-holder, 1 yellow jade twin vase and 1 black jade dish, K'ien-lung period (1736-1795), China; from A. W. Bahr—a plastron of turtle inscribed and used for divination, Shang dynasty (about 1500 B.C.), China; from Samuel J. Record—a stone ax-head, Colombia; from H. C. Benke—990 herbarium specimens; from R. T. Crane, Jr.—1 cut tourmaline weighing 58.25 carats; from William J. Chalmers—4 twin cerussite crystals and 9 mineral specimens.

BEQUESTS AND ENDOWMENTS

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, 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,

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

EXHIBITS TO VISUALIZE 1,500,000,000 YEARS OF LIFE

Field Museum Undertakes Project to Illustrate Development from Earliest Prehistoric Times Down to Present Day

THREE LARGE HALLS ARE TO BE DEVOTED TO THE PURPOSE

Plans Cover Plant, Animal and Human Life

Scheduled for Completion in Time for 1933 Exposition

By STEPHEN C. SIMMS

Director, Field Museum of Natural History

Plans are under way at Field Museum of Natural History for the most elaborate project ever undertaken to visualize the development of life on the earth from its earliest beginnings down to the present time—covering a span estimated at approximately one billion five hundred million years.

Three halls of the Museum will be devoted to the extensive series of exhibits comprehended under these plans. These halls will involve a total expenditure of several hundred thousand dollars. The leading scientific authorities are being consulted in connection with the preparation of the exhibits, and eminent artists have been engaged to execute certain groups, series of figures, and paintings.

Directly in charge of the work are distinguished members of the institution's own Staff, including Dr. Berthold Laufer, Curator of Anthropology; Dr. O. C. Farrington, Curator of Geology; Dr. B. E. Dahlgren, Acting Curator of Botany; Elmer S. Riggs, Associate Curator of Paleontology, and Henry Field, Assistant Curator of Physical Anthropology.



Copyright Field Museum

RESTORATION OF STEGOSAUR

One of the twenty-eight large mural paintings by Charles R. Knight for the walls of Ernest R. Graham Hall. Eighteen of the paintings are already on exhibition.

The entire project is scheduled for completion by 1933 or before, in time for visitors to Chicago's Century of Progress Exposition. Besides becoming an outstanding feature of the exposition, depicting some fifteen million centuries of the world's progress, the exhibits will give Chicago a permanent scientific interpretation of existing knowledge of prehistoric times.

The exhibits included under the plans will cover the development of plant life, animal life and human life, from the dawn of the first and lowest forms of single-celled organisms, which leading paleontologists estimate



Copyright Field Museum

A NEANDERTHAL FAMILY

Now on exhibition in Ernest R. Graham Hall. This group was made by Frederick Blaschke who will execute the groups in the Hall of Prehistoric Man, and it represents the type of groups planned for that hall.

first appeared about one and one-half billion years ago, down to the various races of human beings existing all over the world today. Large collections of fossil remains, elaborate life-size group restorations of prehistoric creatures and peoples, large mural paintings reproducing scenes of many millions of years ago, and sculptured life-size representations of types of all the present principal races of man, are among some of the chief forms of exhibition material to be used in telling visually the story of how life began, what it has been like through the ages, and what variations mark human life in modern times.

Historical Geology

The first of the three halls comprehended in the plans is already nearly completed. This is Ernest R. Graham Hall of Historical Geology in which exhibits illustrate conditions on the earth even before the lowest forms of life existed. This hall contains vast collections of fossil specimens, skeletons of huge prehistoric animals, large mural paintings and life-size groups illustrating the development of life from the first forms down through the ages of invertebrates, fishes, amphibians, reptiles, mammals and other forms to the age of man. The groups and paintings, some of which are already on view, and others of which are in the course of preparation, are largely the gift of Ernest R. Graham, who contributed \$125,000 for the purpose.

Prehistoric Man

The second of the three halls will be the Hall of Prehistoric Man. Of the billion and a half years of life on the earth, scientists agree that human life has existed not more than three million years, or a relatively small part of geologic time. The exhibits in this hall will illustrate man's progress from the time he was little more than an

ape down to the dawn of history, or to about 10,000 B.C. This will be done by means of eight life-size groups showing early races of people and their manner of living, and by comprehensive collections of artifacts from various periods. The beginnings of family life, of art, of the



CONGO PYGMY

One of the many types from all over the world to be represented by life-size figures in Chauncey Keep Hall of Physical Anthropology.

domestication of animals, of agriculture and of primitive industry are among the subjects which will be illustrated. Frederick H. Rawson, Samuel Insull, and Silas H. Strawn have contributed funds for one group each. The fund for preparation of this hall is not yet complete, and further contributions are earnestly solicited. Anyone giving \$10,000 for this purpose may have a group named in his honor.

Physical Anthropology

The third of the halls will be known as Chauncey Keep Hall of Physical Anthropology. In this hall will be exhibited comparative groups of human and anthropoid ape skeletons, and twenty full-length life-size figures

illustrating the physical characteristics of all the principal living races of man, showing stature, natural colors, facial and bodily differences, and other distinctive features. There will also be one hundred and fifty life-size face masks, and twenty-seven life-size busts of typical human beings representing various racial strains of Africa, Europe, Asia, Oceania, and North, Central and South America. A bronze group showing a man from each of the three basic racial divisions of mankind—white, black and yellow—standing under a lighted sphere representing the earth, will symbolize the unity of man.

Other exhibits will illustrate such subjects as the intentional deformation practised by primitive tribes; physiologically abnormal types; and demography or social anthropology, comprising studies of vital statistics, multiple births, influence of racial intermarriage, growth of

population, effects of epidemics and diseases on population, and longevity of different races. One exhibit here will illustrate racial problems of the United States.

Preparation of this hall will be financed in part by a bequest of \$50,000 left to the Museum by the late Chauncey Keep, who for fifteen years was a Trustee of the institution, and by a gift of \$18,000 from Mrs. Charles Schweppe, daughter of the late John G. Shedd. Funds to cover the balance, between \$75,000 and \$80,000, have been pledged by Marshall Field in token of his esteem for Mr. Keep, in whose honor the hall is to be named.

Noted Artists Engaged

The services of renowned artists have been secured to prepare the groups and paintings in the three halls. The preparation of the figures, busts and heads in Chauncey Keep Hall has been placed in the hands of Miss Malvina Hoffman, distinguished sculptress with studios in New York and Paris. Miss Hoffman studied under Auguste Rodin, Gutzon Borglum and Herbert Adams, and has been awarded many decorations and prizes both in this country and abroad for her notable sculptures. In connection with her work for the Museum she will make an extensive study of the various races, will consult with leading anthropologists throughout the world, and will travel in Europe, and possibly in India, China and elsewhere, to obtain living models and scientific data.

Frederick Blaschke, sculptor of Cold Spring-on-Hudson, New York, has been engaged to prepare the groups in the Hall of Prehistoric Man, and some of those in Ernest R. Graham Hall. One of his groups, that of a Neanderthal family and their cave, is now on view, and he is at present preparing groups representing the Mesohippus, a primitive horse, and the Titanotheres, a rhinoceros-like animal. Other groups in Graham Hall, including a restoration of a forest of the Carboniferous period, are being prepared by the Stanley Field Plant Reproduction Laboratories.

The series of twenty-eight large mural paintings representing scenes on the earth and restorations of its life in prehistoric ages, is being executed by Charles R. Knight, regarded as the world's foremost painter of paleontological subjects. Eighteen paintings are now on exhibition.

The fossil specimens and human artifacts to be exhibited are the result of various expeditions, of gifts and exchanges, and of Museum purchases.



THE COOLING EARTH

Another of the paintings by Charles R. Knight in Ernest R. Graham Hall. It represents a scene millions of years before any form of life existed.

A BRIEF HISTORY OF FIELD MUSEUM

By DR. OLIVER C. FARRINGTON
Curator, Department of Geology

(Continued from last month)

On the day following the opening of the Museum, nearly 16,000 persons entered its portals. Many expressed gratification that so many of the great collections and unique treasures of the exposition were to be permanently preserved in Chicago. It was realized that the Museum was only beginning, and that in the presentation of its subjects there were yet gaps to be filled and new fields of endeavor to be entered.

During the following year the main lines of future activities were established. Curators were appointed to the different Departments, in part from among those who had been engaged in the preliminary work of installation, and in part from other institutions. W. H. Holmes was called from the United States Bureau of Ethnology to be Curator of Anthropology; C. F. Millspaugh was appointed Curator of Botany; O. C. Farrington was chosen Curator of Geology, and H. W. Nichols, Curator of Economic Geology. The Department of Zoology (excepting ornithology) was placed under the direction of D. G. Elliot, of the American Museum of Natural History. C. B. Cory of Boston was appointed Curator of Ornithology.

Expeditions and field work to expand the collections were begun as early as October, 1894. These included an expedition to Yucatan and other parts of Mexico by Curators Holmes and Millspaugh, for anthropological and botanical material; one to San Domingo by Assistant Curator George K. Cherrie for ornithological specimens, and one to Alaska by Captain M. W. Bruce for ethnologic material. President Ayer brought from Egypt and Italy important acquisitions illustrative of Egyptian and Roman cultures and archaeology.

A series of popular illustrated lectures was given on Saturday afternoons from December to May. As the inclement weather of the winter months considerably lessened attendance, the plan of confining the lectures to two months each in the fall and spring was adopted the following year.

Plans for Museum publications were also inaugurated. It was decided to confine them to scientific or technical subjects. The first ones related to Museum exhibits and to material obtained by expeditions.

A system of memberships was instituted which included Annual Members, Life Members, Patrons, Corporate and Honorary Members. Privileges were established for Members similar to those existing today. During the first year 723 Members were enrolled, an encouraging indication that continued support and cooperation of the citizens of Chicago could be counted upon.

From the first it was desired to extend the advantages of the Museum to all pupils in the public and other schools. Tickets identifying school pupils as such, and providing for their free admission at all times, were distributed in city and county schools, and lectures before classes from schools were given by members of the scientific staff.

On the financial side there was welcomed the decision of the South Park Commissioners to appropriate \$15,000 annually in support of the Museum.

An expedition to Mexico by Curator Farrington during 1895 resulted in procuring ores and minerals from the most important mines there, and representative specimens from volcanoes, glaciers, *et cetera*.

In the following year (1896) a noteworthy and, for that period, novel step was taken in outfitting, under the

direction of Curator Elliot, an expedition to Africa to procure an extensive series of animals. This was done on a scale which was at that time quite unique in the history of museums. Carl E. Akeley, Chief Taxidermist of the Museum, accompanied Curator Elliot. The expedition spent six months in Africa and returned laden with a great variety of specimens of the characteristic animals of Somaliland and adjoining regions. This was the beginning of many African trips which have been undertaken since both by this and many other institutions and individuals. The mounting of the animals obtained subsequently engaged Mr. Akeley's attention for many years and resulted in some of his finest work. Most of the specimens are still to be seen in Akeley Memorial Hall of the Museum.

During the early years, much internal readjustment and improvement was constantly being carried on in the Museum. New material was being added, and the work of preserving and organizing the somewhat hastily installed original collections, and transferring them from the temporary cases used in the exposition to more permanent and substantial ones, was continually in progress.

(To be continued next month)

EDUCATIONAL SETS OF POST CARDS

The Museum recently published thirty-seven educational sets of post cards illustrating subjects represented in the exhibits of the Departments of Anthropology, Geology, Zoology and the N. W. Harris Public School Extension. The cards are printed by the photogravure process. Each card contains a brief text. The sets are in special envelopes prepared for convenience in mailing, but they also may be mailed as individual post cards if desired. They are suitable, too, for mounting in albums, and can thus be made into a pictorial natural history library. Children, especially, will be interested in them, and in their case there can be no doubt of the truth of the old Chinese proverb, "One picture is worth 10,000 words."

Following is a list of the sets with subjects, number of cards in each, and price:

Numbers and subjects of sets	Cards in sets	Price	Numbers and subjects of sets	Cards in sets	Price
ANTHROPOLOGY					
1. Archaic Bronzes, China	16	.30	23. Wooden Masks, New Guinea and New Britain	10	.20
2. Sung Bronze Vases, China	10	.20	24. Prepared Human Heads, New Guinea and New Hebrides	8	.15
3. Bronze Figures, China	15	.30	25. Alabaster Jars, Egypt	12	.25
4. Ancient Pottery, China	14	.30	26. Bronzes and Ivory Carvings, Benin, West Africa	12	.25
5. Mortuary Clay Figures			27. Medicine-man, Wooden Masks, etc., Cameroon, West Africa	8	.15
6. Animal Figures, China	10	.20	GEOLOGY		
7. Mortuary Clay Figures			1. Restoration of Ancient Landscapes, Plants and Animals	14	.30
8. Buddhas, China	14	.30	2. Neanderthal (Mousterian) Man	10	.20
9. Buddhist Sculpture, Buddhas, China	7	.15	ZOOLOGY		
10. Buddhist Sculpture, Monks, China	14	.30	1. Apes and Monkeys	8	.15
11. Buddhist and Taoist Sculptures, China	6	.10	2. Interesting Large Rodents	7	.15
12. Imperial Costumes, China	6	.10	3. Marsupials, or Pouched Mammals	8	.15
13. Actors' Costumes, China	8	.15	4. Tarantulas, Centipede and Scorpions	10	.20
14. Lama Myatery-play, Tibet	13	.30	5. Skates and Raya of American Waters	10	.20
15. Folk Costumes, Tibet	10	.20	6. Common American Moths	10	.20
16. Buddhist Sculpture, India	14	.30	7. Common Illinois Butterflies	20	.40
17. Ancient Sculpture, Mexico	8	.15	N. W. HARRIS PUBLIC SCHOOL EXTENSION		
18. Drums, Daggera, Bags, etc., New Britain and New Guinea	11	.20	1. Types of cases loaned to Chicago Schools	7	.15
19. Household Utensils, Admiralty Islands and New Guinea	10	.20			
20. Human and Animal Figures, New Guinea	10	.20			
21. Ceremonial Masks, New Guinea, and New Hebrides	8	.15			
22. Malagan Figures and Masks, New Ireland	10	.20			

Post card sets on other subjects will be added to these series from time to time.

RAYMOND PROGRAMS FOR CHILDREN

Four free motion picture entertainments for children, provided by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division of Field Museum, will be given on Saturday mornings during April in the James Simpson Theatre of the Museum. There will be two showings of each, one at 10 A.M. and one at 11. Following is a complete schedule:

April 5—Persimmons in China, Magic Yellowstone, Knights of the Air, The Ant, Our Spring Birds.

April 12—King of the Rails, Wireless, The Butterfly, Our Spring Wild Flowers.

April 19—Getting Canada's Goat, Edison, the Wizard, Lions and Other African Animals.

April 26—Daniel Boone (*film presented by the late Chauncey Keep*), The Grand Canyon, A Baby Bear.

Children from all parts of Chicago and suburbs are invited to attend these entertainments.

APRIL GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during April:

Week beginning March 31—Monday: 11 A.M., Japan, 3 P.M., Rare Animals; Tuesday: 11 A.M., Precious Stones, 3 P.M., Animal Life of the Chicago Region; Wednesday: 11 A.M., Invertebrate Animals, 3 P.M., Chinese Art; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., South American Archaeology, 3 P.M., Physiography.

Week beginning April 7—Monday: 11 A.M., Industrial Models, 3 P.M., Roman Hall; Tuesday: 11 A.M., Eskimo Life, 3 P.M., Unusual Plants; Wednesday: 11 A.M., North American Trees, 3 P.M., Prehistoric Life; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Primitive Pottery, 3 P.M., Indian Ceremonies.

Week beginning April 14—Monday: 11 A.M., Lower Plant Forms, 3 P.M., Indians of the Northwest; Tuesday: 11 A.M., Birds of the Chicago Region, 3 P.M., Music Among Primitive Peoples; Wednesday: 11 A.M., Mammals Past and Present, 3 P.M., Egypt; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Wood Carvers, 3 P.M., Cereals of Many Kinds.

Week beginning April 21—Monday: 11 A.M., Fish and Reptiles, 3 P.M., Drama in the Orient; Tuesday: 11 A.M., Java and Sumatra, 3 P.M., Animal Homes; Wednesday: 11 A.M., Economic Plant Fibers, 3 P.M., Micronesian Art; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Textiles, 3 P.M., Games and Toys.

Week beginning April 28—Monday: 11 A.M., Users of Ivory, 3 P.M., Coffee, Chocolate and Tea; Tuesday: 11 A.M., Fur and Feather Clothing, 3 P.M., Beadwork; Wednesday: 11 A.M., Uses of Stone in Early Egypt, 3 P.M., Animals of Tropical Climates.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in **FIELD MUSEUM NEWS**. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

NEW MEMBERS

The following persons were elected to membership in Field Museum between February 17 and March 15:

Associate Members

Guy H. Abbott, A. P. Allensworth, Edward E. Armstrong, Samuel G. Artinstall, Jr., Harold Beacom, Miss Mary E. Davidson, Mrs. Edwin O. Griffenhagen, Miss Blossom L. Homan, Dr. Margaret M. Jones, Mrs. Noble Brandon Judah, Carl P. Kipp, Frank W. Lawton, Leo A. Loeb, Dr. R. A. Melendy, Mrs. Walter H. Miller, Miss Doris A. Plapp, Robert M. Roloson, Joseph E. Rogers, Miss Dora A. Seeberger, Frank R. Stenson, Felix Stern, Mrs. William Watkins Vincent, James Walker, Laurence W. Washington, Dr. M. L. Weinstein.

Sustaining Members

Dr. Malcolm Kemper, Thomas C. Orr

Annual Members

Dr. Walter C. Alvarez, Louis L. Becker, Mrs. Edith D. Bidwell, Joseph K. Boyd, Gerard S. Brown, Miss Mary F. Crellin, Mrs. S. S.

Date, E. E. Davis, Miss Helen C. Deery, Miss E. L. Drew, Albert K. Epstein, Paul E. Floyd, Dr. Oliver C. Foreman, Mrs. Joseph A. Grendeske, Flint Grinnell, William G. Huard, Homer D. Jones, Jr., Mrs. Harold R. Kibler, Mrs. Stella R. Kinn, Newell C. Knight, Mrs. John F. Lane, Mrs. J. H. MacClane, Mrs. William V. MacGill, Emanuel Marks, Miss Bess B. Martin, Miss Jessie Mathews, Peter M. McNabb, Mrs. O. L. Mitchell, Rev. Edward J. Mullaly, W. A. Niles, Mrs. George N. Northrop, Maxwell M. Nowak, Mrs. Richard F. Outcault, Jr., Mrs. Leon R. Pescheret, Leonard Peterson, Cassius H. Phelps, Mrs. Carl Piowaty, Harold Plumley, Mrs. A. C. Preble, Mrs. William F. Renshaw, Sr., Harold F. Reynolds, Mrs. Carey W. Rhodes, Miss Florence Rick, Miss Nellie Robinson, Bert A. Rupprecht, Miss Bessie M. Saplitzy, Miss Meta Schellenberg, Mrs. R. F. Schenck, Sydney K. Schiff, Arthur C. E. Schmidt, Mrs. F. E. Schumann, Gilbert B. Seehausen, Miss Marie Sheahan, Roger A. Simonson, Jr., Walter H. Simpson, James G. Skinner, Mrs. Olive C. Sleeper, Mrs. M. E. Slocum, Dr. Joseph A. Smith, Mrs. Agnes R. Snitjer, Mrs. Sydney B. Snow, H. B. Tabb, Mrs. Axel Werelius, Guy Willard, Carl F. Wolcott.

GIFT OF JADES FROM MRS. W. H. MOORE

Mrs. William H. Moore of New York (formerly of Chicago) recently gave \$5,000 to Field Museum for the purchase of three exquisite objects of eighteenth century carved Chinese jade, selected by her from the Devine collection. The pieces have been received, and will be added to the material now being prepared for exhibition in the new hall (Hall 30) which is to be devoted exclusively to Chinese jades. One of the pieces presented by Mrs. Moore is a large round brush-holder of green jade, the largest and finest of its type in existence, with a beautifully carved landscape encircling it. Another is a pair of joined twin vases of the extremely rare yellow jade, with a carved decoration in high relief representing plum-tree branches and bats. Finally, there is a dish in the shape of a shell, resting on three smaller carved shells for legs, and decorated with a carved lotus stem and two crabs surmounting it. This is made of black and white jade, another extremely rare variety.

Ancient Wood from Kish

Several specimens of date-palm wood, preserved for more than 5,000 years amid the ruins of the ancient city of Kish, where the Field Museum-Oxford University Joint Expedition to Mesopotamia is conducting archaeological excavations, have been received at the Museum.

Curator Osgood in London

Dr. Wilfred H. Osgood, Curator of Zoology at the Museum, has gone to London on a research mission. He will spend several months in study of type-specimens in the British Museum (Natural History) for purposes of comparison with specimens obtained by the William V. Kelley-Roosevelts Expedition to Eastern Asia.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and may appoint their successors in perpetuity. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$100; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to **FIELD MUSEUM NEWS** is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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No. 5

HANDBOOK OF DUNES FLOWERS

Most people will be astonished to learn that there are more than 1,400 different kinds of plants growing in the Indiana Dunes at the southern end of Lake Michigan. Equally surprising is the fact that there are some twenty-five species of wild orchids there (some of them, to be sure, now almost extinct), and such other rare inhabitants as the pitcher plant, tamarack, gold-thread, cranberry and hunchberry.

These facts are revealed in *Flora of the Indiana Dunes*, a handbook describing all the flowering plants of that region, which has just been published by Field Museum. It is the only book in print that contains descriptions of all the plants of the Dunes. Donald C. Peattie, well-known writer and botanist, formerly on the staff of the United States Department of Agriculture, is the author. Mr. Peattie has devoted a great deal of time to exploring the Dunes, and collecting and studying their flora. Dr. B. E. Dahlgren, Acting Curator of Botany at the Museum, is editor of the book, which has 432 pages, including an eight-page glossary and a twenty-page index.

Residents of Chicago are fortunate in having easily accessible an area in which they may see growing so many plants as in the Dunes, which have long been known as one of the richest and most interesting botanical regions of the United States. This book, pocket size and bound in green fabrikoid flexible covers, will be of service to anyone who visits the Dunes. To aid the amateur in identifying the beautiful flowers of the region the language has been made as simple as possible, and many illustrations have been provided. The botanist will find the book valuable because it gives the only complete record of the plants that have been found in the Dunes area.

The book is useful also in identifying flowers found everywhere about Chicago, and over the states of Illinois, Indiana, Michigan and Wisconsin. It is on sale at the Museum and leading bookstores at \$2 per copy (plus postage if ordered by mail).

MOTOR COACHES NOW RUNNING TO FIELD MUSEUM DOOR

Regular bus service direct to the entrance of Field Museum has been inaugurated by the Chicago Motor Coach Company. The Jackson Boulevard motor coaches (No. 26), in addition to their regular runs to and from the west side, now operate on Michigan Avenue between Jackson and Eleventh Street, over the Eleventh Street bridge and across Grant Park to and from the Museum, during the hours the Museum is open. Free transfers are issued between these busses and all other lines of the motor coach company. The company plans to operate this service throughout the year.

AMAZON EXPEDITION RETURNING

Llewelyn Williams, Assistant in Wood Technology on the Museum staff, and leader of the Peruvian division of the Marshall Field Botanical Expedition to the Amazon, is expected back in Chicago about the middle of May. He has made large and important collections of woods and other botanical material in the Amazonian forests of Peru, and explored some regions believed never before to have been entered by a white man. Mr. Williams has been in the field about one year. The other division of the expedition, which worked along the Amazon in Brazil under the leadership of Dr. B. E. Dahlgren, Acting Curator of Botany, returned several months ago.

Addition to Jade Collection

The Museum's Chinese jade collection has been augmented by a gift, from a donor who wishes to remain anonymous, of a beautiful white jade tray of the K'ien-lung period (eighteenth century). It is finely carved in the shape of a lotus leaf, and a dragon fly is represented as crawling across it. The piece is unusually translucent.

MUSEUM LECTURES BY RADIO

A series of six radio lectures on exploration and the results of scientific research will be given by members of the staff of Field Museum over broadcasting station WLS (*The Prairie Farmer* station) on Wednesday evenings at 7:30 P.M., beginning April 30.

Director Stephen C. Simms will be the speaker on April 30, and his subject will be "Field Museum." On May 7 Dr. Berthold Laufer, Curator of Anthropology, will talk on "Travels and Explorations in Tibet." Paul C. Standley, Associate Curator of the Herbarium, will speak May 14 on "Wild Flowers of the Chicago Region." Elmer S. Riggs, Associate Curator of Paleontology, is scheduled for May 21 with a lecture on "When Elephants Roamed about Chicago." Karl P. Schmidt, Assistant Curator of Reptiles, will lecture on "What a Naturalist Does in a Museum," on May 28. The last lecture, on June 4, will be by Wilfrid D. Hambly, Assistant Curator of African Ethnology, who will speak on "Primitive Tribes of Angola, West Africa."

FIVE NEW BIRDS DISCOVERED

Field Museum announced on April 9 the discovery of five species of birds new to science, resulting from the collections made by the recent William V. Kelley-Roosevelts Expedition to Eastern Asia. Four are new kinds of babblers, and one is a warbler. One has been named in honor of William V. Kelley, sponsor of the expedition, and one for Russell W. Hendee, zoologist, who died of tropical fever in the interior of Indo-China last summer while a member of the expedition. Descriptions of the new birds were prepared by Josselyn Van Tyne, Assistant Curator of Birds at the Museum of Zoology of the University of Michigan, who was a member of the expedition, and Outram Bangs, Curator of Birds at the Museum of Comparative Zoology, Cambridge, Massachusetts. The type-specimens will remain in Field Museum.

Spring Brings Increased Work Among Children by Raymond Division



Typical group of children visiting Field Museum under guidance of a lecturer of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division (see editorial on page 2)

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

STEPHEN C. SIMMS, *Director of the Museum*.....Editor

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O. C. FARRINGTON.....Curator of Geology
WILFRED H. OSGOOD.....Curator of Zoology

H. B. HARTE.....Managing Editor

Field Museum is open every day of the year as follows:

November, December, January 9 A.M. to 4:30 P.M.
February, March, April, October 9 A.M. to 5:00 P.M.
May, June, July, August, September 9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

In the Museum is a cafeteria where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members should inform Museum promptly of changes of address.

RAYMOND DIVISION WORK

As true harbingers of spring and summer as the birds and flowers (which are the subjects of articles in this issue of FIELD MUSEUM NEWS) are the increasingly large groups of children brought to the Museum for the tours of the exhibits conducted by staff lecturers of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division. Practically any day (except Sunday), and usually several times a day, groups of children will be found parading through the Museum halls, their eyes feasting on the exhibits and their ears alert to catch the words of the guide-lecturers. A typical group is shown in the photograph on page 1 taken in Stanley Field Hall on April 16, when a troop of 121 Girl Scouts toured the Museum, under the guidance of Miss Margaret M. Cornell, Chief of the Raymond Division. Through such tours as this, and the other educational activities conducted by the Raymond Division, such as the series of Saturday motion picture programs, and the extension lectures

provided for classrooms and assembly halls of schools all over the city, more than 250,000 children are being reached annually. It will thus be seen that Chicago owes a great debt to Mrs. James Nelson Raymond for her generous endowment which has made possible the carrying on of this work.

NEW MAYA COLLECTION

A collection of some 300 ancient Maya objects gathered in Central America has been received at the Museum. Of special interest are a number of oboe-like whistles in the form of human figurines with several holes for producing various notes; button-shaped copper bells used in necklaces, anklets and clothing for ceremonial dancing; pottery stamps by means of which designs were impressed on the body in arnatto dye, producing an effect similar to tattooing; handsome painted pottery, jade beads, fragments of ancient idols, and other artifacts. The material had been concealed for a thousand years in a thick forest which covered the ruins of an ancient city, and was exposed when modern Mayas cleared the ground with ax and fire in order to plant maize. With material previously collected by the Marshall Field Archaeological Expeditions to British Honduras, conducted by J. Eric Thompson, Assistant Curator of Central and South American Archaeology, these will serve to enlarge the Museum's representation of the ancient Mayas.

Director's Annual Report

The Annual Report of the Director to the Board of Trustees for 1929, a 265-page volume illustrated with twenty photographic plates, will be sent to all Members of the Museum as rapidly as possible.

Gifts to the Museum

Following is a list of some of the principal gifts received by the Museum during the last month:

From the Estate of John Telliog—56 specimens native copper and associated minerals; from Dr. Lewis H. Weld—15 gall-insects and 16 insect-galls (paratypes); from Dr. Alfred S. Romer—41 lizards, 1 frog and 1 snake; from General Biological Supply House—4 rare frogs (*Syrhropus marnockii*) and 1 turtle; from School of Forestry, Yale University—87 specimens of plants collected in Colombia; from Henry J. Patten—6 Babylonian clay tablets; from William B. Greenlee—1 ivory opium-pipe, China, 1 gilded Buddha image, Siam, 1 knife, Nepal, 1 pottery lamp, Italy; from J. W. Young—prehistoric coiled cooking pot found in the Chaco Canyon, Washington; anonymous—1 white jade dish in the shape of a lotus leaf, China.

Have you seen the Museum's Neanderthal group?

BEQUESTS AND ENDOWMENTS

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, 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,

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

RITUAL BULLFIGHTS

By BERTHOLD LAUFER

Curator, Department of Anthropology

Among six cast brass figures from Borneo recently presented to Field Museum by N. M. Heeramanek of New York there is one that represents two fighting bulls with lowered heads, intense with motion, trying to gore each other. Standing behind each is a man, eagerly watching the outcome of the duel.

The bullfights of Mexico and Spain, held for sport and entertainment, are known to everyone, but it is not generally known that the custom of holding public contests between bulls, or bulls and men, dates back to very ancient times, in fact as early as prehistoric times. In its origin this custom was not intended merely to provide excitement for the masses, but was bound up with religious ideas. It formed part of a ritual in connection with a highly developed type of agriculture characterized by the cultivation of cereals, the use of the plow, and the utilization of the ox as a draft animal. The rite of the bullfight was supposed to promote the fertility of the fields or to forecast the crop output. The ox, domesticated chiefly for drawing the plow and thus helping man to secure his daily bread, was regarded as sacred in all ancient civilizations of Asia.

In the art of ancient Crete contests between bulls and young men or women are represented. In ancient Greece "bull-baiting," as it was called, was held in honor of Poseidon, god of the sea. In ancient China the living ox was replaced by an image of earthenware, which personified the spring; this image was beaten with the intention of beating the spring itself to hasten its arrival. The underlying idea was that of a struggle between man and a beast endowed with supernatural powers, the latter being put to death that its vigor might transfuse itself into the growing crops.

Where ritual bullfights take place, the animals are carefully selected and trained. Shortly before the combat their pugnacity is aroused by forcing potent liquors down their throats. After the duel the victor is led in triumphal procession to the accompaniment of drums and chants. He is then sacrificed to the guardian deity of the crops, whose representative he is, by the chief of the tribe in his capacity as priest. No blood is allowed to flow; the animal is either clubbed to death, or a spike is driven into his forehead. His flesh is then divided and solemnly consumed at a ceremonial banquet of the community that usually ends in a wild drinking orgy. Finally the horns of the slain animal are set up on a tall pole in a public place and exalted as cult objects.

This custom is still observed by the aboriginal hill-tribes of southern China and Indo-China, and in Malaysia and Korea. At Memphis in Egypt, bulls bred for the purpose were made to fight one another, the victor being awarded a prize. Bullfights are still common in all Malay states not under British rule. The Malay state of Menangkabau in Sumatra owes its name to a contest of this sort as far back as the fourteenth century, the name Menangkabau meaning "Vanquished Karabao" (water-buffalo).

In Madagascar fights between bulls were the favorite sport of the former sovereigns and their courtiers, who availed themselves of such occasions for getting royally drunk.

Museum hours in May: Daily, 9 A.M. to 6 P.M.

THE MAY BIRD MIGRATION

By COLIN CAMPBELL SANBORN
Assistant in the Department of Zoology

The spring migration of birds reaches its height in May. During this month about two hundred species are to be found in the Chicago area. Of these, about half are passing through to their nesting areas farther north while the others remain to breed. There are about sixty different kinds of birds nesting in this area in May.

Birds make their long flights at night and stop to rest and feed during the day. The Chicago parks offer not only attractive stopping places for many migrants but also



Bufflehead Duck

Traveling exhibition cases such as that pictured above familiarize Chicago's 500,000 school children with migrant and native birds. The cases are circulated by the N. W. Harris Public School Extension of Field Museum, and two of them go to each of more than 400 schools every two weeks.

excellent places for bird observation by students. The weather determines the length of time the migrants stay here. When May is warm the birds pass through gradually, first one species and then another. If the first part of the month is cold, however, the birds are held back farther south and then, on the first warm days, all come with a rush and stay but a short time.

More is being added each year to what little is known about bird migration. A bird is trapped alive and then released with a small numbered band on its leg. Other bird banders may trap it later and through the number learn where it came from. The bands do not injure the birds in any way.

Perhaps the most interesting birds in the May migration are the warblers, of which thirty-eight species have been recorded from this area. Besides the more somber colored birds seen in May, such as sparrows, thrushes, and flycatchers, there are the bright tanagers, grosbeaks, and orioles. Many of the May migrants can be identified from the specimens in the systematic series found in Hall 21 of the Museum.

FROG VOICES IN SPRING

By KARL P. SCHMIDT
Assistant Curator of Reptiles

No sounds are more characteristic of spring than the croaking and piping of frogs from marsh and pond. These are pleasant sounds to those who love the out-of-doors with its life, and some of our Chicago frogs have truly musical voices.

It is interesting that each of the eleven kinds of frogs in the Chicago area can be distinguished by its voice alone. The smallest species, and the first to sing in March, has the loudest voice of all. This is the swamp tree frog, with three brown stripes down its back, little more than an inch in length. Its voice, resounding from the frog's distended throat, may be heard a mile away.

The spring peeper, a small tree frog with an X on its back, has a shrill musical whistle.

The voice of the common spotted meadow frog is a typical croak which does not carry to any great distance. Its spotted relative, the yellow-legged pickerel frog, has a voice often described as a prolonged snore.

The toads' high-pitched prolonged trills carry well on the still night air. The voice of the common toad has a liquid musical quality, while Fowler's toad has a disagreeable nasal cry.

The frogs heard later in the season are the small cricket frog, whose voice may be imitated accurately by striking small stones together; the green frog, with a musical "ktung" like the plucked string of a 'cello; and, lastly, the bull frog, whose deep bass voice seems so appropriate to his size. A host of species whose existence was previously unsuspected has become known since naturalists have learned to discriminate frogs by means of their voices. Specimens of various frogs found in the Chicago area, and also of others found in different localities, are on exhibition in Albert W. Harris Hall (Hall 18) of Field Museum. An effort is being made to complete the representation of the local species during the current year.

SIMULACRA

By H. W. NICHOLS
Associate Curator of Geology

Many specimens are brought to Field Museum as fossils which are not fossils at all, but accidental imitative forms called simulacra. Waterworn pebbles are often mistaken for fossil eggs, and many supposed fossils of a great variety of objects such as axes and hams are of this nature.

The most curious example was perhaps a piece of waterworn limestone which did have a superficial resemblance to the fossil baby monkey it was supposed to be. Pieces of slag found in outlying districts are often brought in on the assumption that they are meteorites. The greater number of supposed fossils brought to the Museum are concretions, or aggregations of minerals deposited from solution in many curious shapes, some of which in their general outlines resemble many familiar objects. One common kind of concretion is often mistaken for a fossil horse's hoof. Others are brought in as petrified human arms, legs and feet. Still others are mistaken for turtles or for birds' nests.

Actual fossils are often mistaken for petrifications of quite a different character. Thus a long, thin shell was thought to be a fossil bird's beak. The fossil so-called "honeycomb" coral is often taken to be a petrified honeycomb, and the long, jointed shell of a fossil mollusk is thought to be a petrified backbone.

Some of these specimens, although they are not what they are mistaken for, are nevertheless of considerable value and interest when their true nature is known. A supposed fossil hoof, for instance, proved to be a hitherto unknown species of fossil clam. During the Middle Ages, mistakes of the reverse nature were made. The classical example was that of the interpretation of fossil shells as simulacra made by the devil and placed in the rocks to dupe the innocent.

Orchid Exhibit

Various typical orchids, and the characteristics of their family, are illustrated by an exhibit in the Hall of Plant Life at Field Museum. Included is a large reproduction of a vanilla plant, which is a member of this family.

CHICAGO'S SPRING FLOWERS

By PAUL C. STANDLEY
Associate Curator of the Herbarium

After the robins and bluebirds arrive from the south, we await impatiently the appearance of their companion heralds of summer, the spring flowers. These are now in their prime around Chicago. This region is fortunate in having a plentiful supply close at hand in the forest preserves and the Indiana Dunes.

The first to appear are the pussy willows and the quaint but odoriferous skunk cabbage. These are followed shortly by the white adder's-tongues, the blue hepaticas, the waxy-white chalice of the bloodroot, and that lovely but coy blossom, the trailing arbutus, whose delightfully fragrant flowers are half hidden beneath the evergreen leaves which carpet favored glades among the sand dunes.

In the cold swamps the marsh marigolds display vivid splashes of gold among the leafless shrubbery. Soon, as the delicate velvety pink of young oak leaves begins to indicate an awakening of life in dusky branches, the woods become brilliant with varied color. Spring-beauties, blue and yellow violets, trilliums, phlox, columbine, Dutchman's breeches, shad bush, polemonium, and bluebells make our patches of wilds veritable gardens. The violet was chosen most appropriately as the state flower of Illinois, for it persists in abundance in our woodlands and prairies despite almost universal cultivation.

A little later in the spring the flowering dogwood and crabapple blossoms dominate the landscape. What could surpass in beauty the delicate pink of the crabapple thickets,



White Trillium

Exhibits of the spring flowers are taken to the 500,000 school children of Chicago by the N. W. Harris Public School Extension of Field Museum. The above case is typical of these traveling exhibits, two of which go to each of more than 400 schools every two weeks.

with their delicious fragrance? Then, too, the yellow, pink, and white lady's-slippers and other rare plants, although almost extinct in this area, still may be found in secluded places.

The Museum, by means of the portable cases prepared and circulated by the N. W. Harris Public School Extension, is making it possible for the school children of Chicago to become acquainted with our spring wild flowers. Also, in the Hall of Plant Life accurate reproductions of many of our finest wild flowers acquaint visitors with the flowers to be found in rambles through the countryside of Lake Michigan.

Fresh-water Game Fishes

An exhibit of special interest to sportsmen is a collection of the fresh-water game fishes of the rivers and lakes of North America, which is to be seen in Albert W. Harris Hall of the Museum. Pike, pickerel, muskalong, trout, sunfishes, crappies, yellow perch, salmon, and others are represented.

HISTORY OF FIELD MUSEUM

By OLIVER C. FARRINGTON
Curator, Department of Geology

(Continued from last month)

In order to further stimulate interest in the Museum on the part of school children, prizes were offered in 1897 to all grade school children in Illinois by H. N. Higinbotham of the Board of Trustees for the best essays describing the Museum which were based upon information obtained in visits to the institution. This plan, indorsed by the Superintendent of Schools of Chicago and the Superintendent of Public Instruction of Illinois, was carried on for a brief period and served to further direct the attention of school teachers and their classes to the valuable educational opportunities afforded by the Museum.

Among exhibits early inaugurated in the Department of Botany was a series illustrating North American forest trees. This was designed on an elaborate basis and included trunks and transverse sections, commercial planks, photographs of the trees in summer and winter, and other material illustrative of the important forest trees of North America. This series now occupies part of one large hall of the present building. Organization of a large herbarium for this Department was also begun at an early date and this adjunct has rapidly increased in size and value.

The lack of any adequate representation in the geological exhibits of the vast numbers of animals, strange to modern eyes, which in earlier geological periods inhabited the western United States, led to steps being taken early to overcome this deficiency. Successive expeditions led by Assistant (now Associate) Curator Elmer S. Riggs were made to the Bad Lands of South Dakota, Wyoming, Nebraska and adjoining states for this purpose, and remains of many and important species of titanotheres, rhinoceroses, camels, carnivores and various other animals of earlier times were secured. Had they not been obtained then many of them might never have become available.

Other expeditions carried on in this period included several by Assistant Curator George A. Dorsey and associates to the reservations of various Indian tribes of the west and northwest and the Pueblo Indians of the southwest. A botanical expedition sponsored by Allison V. Armour enabled Curator C. F. Millspaugh to make large collections of the flora of the Antillean Islands.

The task of recording and labeling the various collections that had been received from the exposition, as well as those acquired later, was also steadily continued.

In 1898, a great model of the moon, the largest and most accurate ever made, was presented to the institution by Lewis Reese. This is still a unique and valuable feature of the Museum.

In 1899, Mr. Ayer retired from the Presidency of the Museum. He remained, however, a member of the Executive Committee. Mr. H. N. Higinbotham, who had been Chairman of the Executive Committee, was elected President. As President of the World's Columbian Exposition, he had been a steadfast advocate of the Museum and had taken an active part in its organization and support. W. H. Holmes retired as Curator of the Department of Anthropology and was succeeded by Dr. Dorsey. Miss Elsie Lippincott, the present Librarian, was appointed to fill the vacancy in that post caused by the resignation of the previous incumbent, Jules Dieserud.

By 1900 the functions of the Museum had become sufficiently outlined so that discontinuance of the historical and industrial exhibits which had been received from the exposition was decided upon. Accordingly, these exhibits were distributed to the Chicago Historical Society, University of Chicago, Armour Institute and the Philadelphia Commercial Museum.

Through a gift from Stanley McCormick the acquisition and installation of a large amount of material illustrative of the life and customs of the Pueblo Indians of the southwestern United States was achieved. By means of this material and the investigations in connection with it, the fine house group representing the domestic life of the Hopi Indians, nine of their ceremonial altars and several individual figures, such as the rabbit hunter, Hopi bride, and others, were prepared and form a part of highly prized exhibits relating to these tribes to be seen in the present building.

The construction of animal groups under Chief Taxidermist Carl E. Akeley was continued with little interruption. Some of the more important groups constructed at this time were those of the lesser and greater koodoo, Waller's gazelle, and mountain sheep, and the work perhaps reached its climax in 1901 in the so-called "Four Seasons" groups of the Virginia deer, in which the wealth of accessories and detail reached a height never before attained.

During all this time the condition of the Museum building was causing much concern and its maintenance proved costly and unsatisfactory. Constructed only for a summer's use, the building lacked the elements of permanency. The exhibits in the interior were constantly exposed to damage by leakage from the roof, and the steady disintegration and fall of the staff which covered the outer walls gave an unsightly appearance to the exterior. As early as 1900, Director Skiff stated that it had been necessary to reconstruct the roof almost completely, and by 1902 he reported that the building as a whole had reached the limits of repair.

(To be continued next month)

NEW MEMBERS

The following persons were elected to membership in Field Museum between March 17 and April 16:

Associate Members

Mrs. Charles Osborne Barnes, Harry Barnum, Dr. J. F. Biehn, Mrs. Lionel E. Bush, Miss Mary Louise Clas, Dr. Earl A. Courvoisier, Dr. Thomas R. Crowder, William A. Dyeche, Miss Amy Falk, Mrs. Albert B. George, W. L. Huston, Dr. Richard Herman Jaffe, Wilson W. Lampert, George Tayloe Langhorne, Foreman N. Leopold, W. S. Lockwood, John M. McClun, George Mehring, Donald M. Nelson, Mrs. William E. Pratt, Miss Mabel C. Putnam, Miss Lillian Rueckheim, Joseph A. Rushton, Clyde E. Shorey, Robert E. Simond, John L. Strauss, Leonard H. Vaughan, William A. Vawter, II, Miss Mary M. Vial, George M. Willetts.

Sustaining Members

Mrs. Paul Blatchford, Mark B. Seelen, Mrs. Robert Stevenson, Niles Trammell.

Annual Members

Mrs. K. A. Booth, Mrs. A. H. Brumback, Robert B. Brown, T. Jerrold Bryce, Ossian Cameron, Mrs. Helen S. Chambers, Allan T. Gilbert, Mrs. G. A. Gungoll, Mrs. William H. Herbert, Miss Jean Hutchison, Captain Gordon C. Irwin, J. O. Karstrom, Walter M. Kiplinger, Mrs. Eben Lane, F. H. Lapham, Adolph Lindstrom, Rosa C. Lusk, Mrs. George H. Mason, Simms D. McGuire, Mrs. James McKinney, A. G. McLaughlin, James B. Meigs, Mrs. J. C. Meiners, Miss C. Murphy, Mrs. Lloyd F. Neely, Miss Frances Newborg, Homer E. Niesz, F. Pabst, Mrs. Lawrence W. Pfaltzer, Mrs. Thomas J. Price, Mrs. James E. Pringle, William P. Reed, Miss Edna M. Reineck, Mrs. William Remy, O. A. Rosboro, Mrs. Samuel Rosenthal, Samuel M. Ross, Mrs. Thomas Charles Russell, Henry

MAY GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during May:

Thursday, May 1: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Bird Homes, 3 P.M., Fisher Indians.

Week beginning May 5—Monday: 11 A.M., Fish and Fishing Implements, 3 P.M., Japanese Art; Tuesday: 11 A.M., Skeletons, 3 P.M., Egypt; Wednesday: 11 A.M., African Animals, 3 P.M., Oriental Costumes; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Bird Adaptations, 3 P.M., Roman Life.

Week beginning May 12—Monday: 11 A.M., Food Plants, 3 P.M., Primitive Ceremonies; Tuesday: 11 A.M., Indians of South America, 3 P.M., South American Animal Life; Wednesday: 11 A.M., Chinese Household Objects, 3 P.M., Habitat Groups; Thursday: 11 A.M., and 3 P.M., General Tours; Friday: 11 A.M., Eskimo Art, 3 P.M., Prehistoric Animals.

Week beginning May 19—Monday: 11 A.M., Bark and Fiber Clothing, 3 P.M., Animal Families; Tuesday: 11 A.M., Interesting Sea Life, 3 P.M., Hawaii, Samoa and Maoriand; Wednesday: 11 A.M., Mats and Blankets, 3 P.M., Mummies; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Musical Instruments, 3 P.M., Dinosaurs and Other Reptiles.

Week beginning May 26—Monday: 11 A.M., Horned and Hoofed Animals, 3 P.M., Useful Minerals; Tuesday: 11 A.M., Fish of Many Waters, 3 P.M., Uses of Clays; Wednesday: 11 A.M., Man Through the Ages, 3 P.M., Crystals and Meteorites; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: Holiday—no tours.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

Reptile Exhibits Reinstalled

Snakes of species common in Illinois, including some found within the Chicago area, constitute part of the exhibits in three large reinstalled cases of reptiles and amphibians now to be seen in Albert W. Harris Hall (Hall 18). Also of interest are large pythons, monitors or giant East Indian lizards, the giant frog of Africa, largest species in the world, and, in contrast, the tiny Cuban frog, smallest in the world, of which it would take 40,000 to equal in weight and bulk the ten-pound African cousin.

B. Ryan, Theodore Schmidt, Mrs. Lawrence W. Scudder, Harold N. Selling, Floyd T. Short, Mrs. James F. Shramek, John R. Shuman, Mrs. Ross D. Siragusa, Mrs. Vinton E. Sisson, Joseph Skala, Miss Bessie T. Smale, Miss Jean Small, Mrs. Edwin E. Smeeth, Mrs. Faith Beye Smeeth, Dr. Edwin M. Smith, Hermon Dunlap Smith, Leatham D. Smith, Mrs. Joseph Sobey, Miss Anna Scatch, Dr. C. W. Somerville, Edward A. Sontag, Ralph Z. Sorenson, Mrs. Grace Hauser Stauffer, Mrs. Jessie L. Stevens, Elliott Stevenson, Dr. Allen A. Stockdale, Mrs. Daniel Taylor, Mrs. Theodore T. Toole, Frank L. Venning, Miss Anna S. Vetterliet, Mrs. E. K. Warren, George A. Yates.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and may appoint their successors in perpetuity. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$50; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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MURAL PAINTING OF FIVE KINDS OF PREHISTORIC ANIMALS



This large mural painting showing five forms of prehistoric animals which lived during the Miocene age (about twenty million years ago) in what is now Nebraska, is one of the most recent additions to the series presented to Field Museum by Ernest

R. Graham. The animals are, left to right: Oxydactylus or prehistoric camel; Diceraetherium, small prehistoric rhinoceros; Parahippus, tiny three-toed horse; Dinohyus, or giant pig; and Moropus, a queer animal with a head resembling that of a rhinoceros,

a body like a horse, and clawed feet for digging. The painting is by Charles R. Knight, who also painted the seventeen other murals in Ernest R. Graham Hall of Historical Geology (Hall 38). Ten more are to be painted by him.

TO COLLECT FOR NEW HALLS

In preparation for the installation of the Hall of Prehistoric Man, and Chauncey Keep Memorial Hall which is to be devoted to physical anthropology, collections and studies are to be made throughout Europe this summer by Henry Field, Assistant Curator of Physical Anthropology, and Miss Malvina Hoffman of New York, noted sculptress. Miss Hoffman, who has been commissioned to execute the various series of life-size figures, busts and heads showing racial characteristics which will constitute the chief exhibition material in Chauncey Keep Hall, will begin this work while she is in Europe. She sailed May 23.

Mr. Field, who will sail June 7, will transact purchases of additional material illustrating various cultural periods for use in the Hall of Prehistoric Man. Data and accessories will be collected for use in the life-size groups to be made for that hall by the eminent sculptor Frederick Blaschke, of Cold Spring-on-Hudson, New York, who modeled the Neanderthal family group now exhibited in Ernest R. Graham Hall.

In England excavations for Field Museum will be conducted in the gravels near Cromer, in Norfolk, under the supervision of J. Reid Moir, who has there discovered the earliest traces of the existence of man thus far found anywhere in the world. In addition to collaborating with Mr. Moir, Mr. Field may undertake similar excavations in France and Germany. Additional photographs, drawings and colored sketches of prehistoric sites will be obtained, and photographs of racial types from all over the world will be acquired from European collections for use in making

photographic transparencies to be exhibited in Chauncey Keep Hall. The cooperation of leading European scientists has been assured to the Museum's representatives.

SPECIAL NOTICE

All Members of Field Museum who have changed their residences since May 1 are earnestly urged to notify the Museum at once of their new addresses, so that copies of FIELD MUSEUM NEWS and all other communications from the Museum may reach them promptly.

Members going away for a period during the summer, who desire Museum matter to be sent to their temporary addresses, may have this service by notifying the Museum of the summer address and the dates between which it is to be used.

New Bird Exhibit

A new case containing more than 150 specimens of North American song birds and perching birds has been added to the systematic bird collections in Hall 21. A large proportion of the species represented are inhabitants of or frequent visitors to the Chicago area. All birds found in Illinois are indicated with a red star. Several birds of exceptionally brilliant and varied coloration are shown. Some of the most beautiful ones were collected last summer by the Marshall Field Arizona Expedition, led by Taxidermist Ashley Hine. Mr. Hine mounted most of the birds in the case.

EXPEDITION TO SOUTHWEST

Field Museum will dispatch an archaeological expedition to the southwestern part of Colorado this month, to make collections for use in enlarging and improving the exhibits in Hall 7. Plans have been adopted for a complete reinstallation of this hall, which at present is devoted to the sedentary tribes of Arizona and New Mexico. Under these plans the exhibits in the hall will cover the archaeology of the entire southwestern region, and its ethnology as well.

The expedition is financed from income derived from the Julius and Augusta Rosenwald Fund. Dr. Paul S. Martin, Assistant Curator of North American Archaeology, will be leader. He will leave for Colorado about June 10, and will immediately begin work on certain archaeological sites there with which he is acquainted as a result of previous reconnaissance work he has done in the region.

About three months will be spent in the field. Excavations will be made, and in addition to collecting material for exhibition purposes, photographs and various other data will be sought for use later in connection with the construction of groups representing early pueblo houses, burial mounds, a kiva, a Casas Grandes ruin and other typical manifestations of the various early southwest culture periods. Also, research will be conducted to obtain new scientific information on cultural sequences as revealed by stratification.

To reach the Museum by Chicago Surface Lines get off cars at Wabash Avenue and Roosevelt Road and walk east.

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

STEPHEN C. SIMMS, *Director of the Museum*.....*Editor*

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O. C. FARRINGTONCurator of Geology
WILFRED H. OSGOODCurator of Zoology
H. B. HARTEManaging Editor

Field Museum is open every day of the year as follows:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

In the Museum is a cafeteria where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members should inform Museum promptly of changes of address.

OLD FRIENDS IN THE WILDS

Toward the end of this month Chicago's schools will close for the summer vacation period. With their closing, the principal part of another year's work of the Department of the N. W. Harris Public School Extension of Field Museum will be concluded.

Through the circulation by this Department of some 1,100 traveling exhibition cases containing wild flowers, birds, and small mammals, approximately 500,000 children have been reached repeatedly throughout the school year. Each child has had access to two cases every two weeks, and thus close to eighty different subjects in all have been brought to his attention during the course of the school terms.

It is hoped and confidently believed that as a result of their observation of the material contained in these cases, added pleasures will be experienced by these half-million children during their vacations this summer. With the increased opportunities vacation provides for the children to encounter in life the birds, the animals, the

flowers and plants, they will find as a result of their contact with the traveling exhibits that many of these things are familiar. There is more satisfaction in meeting a strange looking bird and knowing what he is than in seeing him and not feeling any glint of recognition. The children who remember the specimens they have studied in the Harris cases will find the parks, forest preserves, lakes and other places they may visit full of old friends.

A LITTLE LIGHT FOR CHILDREN WHO LIVE IN DARKNESS

A most touching evidence of appreciation of the work being carried on by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures was received by the Director of Field



Byron Webb's Letter

Appreciation of a Raymond Foundation lecture, written in the Braille system for the blind. Photograph is one-third actual size.

Museum last month in the form of thirteen letters, written in the Braille system, from blind pupils of the Burley Public School. The children had heard some extension lectures given in their classroom by a member of the Raymond Foundation staff.

One of the letters, with its punched symbols spelling out the words so they may be read by the blind through their fingers, is shown in the accompanying picture. Its contents are typical of the sentiments expressed in all the letters. It is written by a sixth grade boy, and, translated, it reads:

To the Field Museum,

DEAR SIR:

I enjoyed the lectures on South America and the Indians very much, and I hope they will have many more interesting lectures like them. I would like to go down to the Museum and feel some of the things that you have.

Sincerely yours,

BYRON WEBB

The other letters are from boys and girls from the age of seven up, representing all school grades from the first to eighth. Some of those from the younger children pathetically express the hope of coming to the Museum "to see the animals and things."

Dr. Laufer Honored

Dr. Berthold Laufer, Curator of Anthropology, was elected last month to membership in the National Academy of Sciences, Washington, D.C., an honorary organization. The honor was conferred on Dr. Laufer in recognition of the vast amount of research he has conducted, especially in connection with Oriental cultures.

DOWNSTATE SENDS VISITORS

Large groups of visitors from downstate Illinois are being brought to the Museum at frequent intervals under the auspices of the Chicago Entertainment Committee, under the direction of its Secretary, Clyde I. Backus, Assistant Director of the Department of Registration and Education, State of Illinois.

So far in 1930 the Committee has brought three groups aggregating 1,143 persons, with other parties scheduled for the near future. Many others were brought last year. Groups include both school children and adults, and are formed in cities, towns, villages and rural districts. Kiwanis, Lions, Rotary and similar clubs and civic organizations in the various places cooperate in organizing the parties, and the railroads are extending special low rate fares. Mr. L. C. Larson is directly in charge of the parties, and guide-lecturers of the Museum staff conduct the tours of this institution.

New Snake Discovered

A remarkable new species of poisonous snake has been discovered at the Museum during examination of a reptile collection recently received. It is a new kind of horned viper, and was obtained in the Syrian Desert by Assistant Curator Henry Field, while leading the Marshall Field North Arabian Desert Expedition. That none of its species has ever been previously reported was established by Karl P. Schmidt, Assistant Curator of Reptiles. Mr. Field's collection, which was made incidentally to the main objective of his expedition—gathering of anthropological material—contained other valuable reptile specimens, including an extremely rare lizard of which only one other specimen was ever obtained, and a desert monitor or giant lizard.

Gifts to the Museum

Following is a list of some of the principal gifts received by the Museum during the last month:

From Dr. A. C. Kinsey—188 gall insects and 407 insect galls; from the Bureau of Science, Manila—3 crocodiles; from Edward H. Taylor—19 specimens of frogs, lizards and snakes; from William G. Clegg—2 red grouse; from Hercules Powder Company—exhibit of pine distillation products; from Charles Grosskurth—a white pine board for exhibition; from I. S. Schneider—iron spear and iron crescent-shaped ax, North Africa; from Miss Lida A. Pittman—a gilded brass bracelet, inlaid with cat's eyes, India; from Mrs. Charles Schweppe—a decorated metal mirror, T'ang period (A. D. 618-906), China; from Thomas S. Hughes—2 black red-figure vases, Greece.

Ample free parking space for automobiles is available at the Museum.

BEQUESTS AND ENDOWMENTS

Requests 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, 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,

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

EGYPTIAN BURIAL EXHIBIT

By T. GEORGE ALLEN
Assistant Curator of Egyptian Archaeology

An actual-size representation of a pre-dynastic burial of Egypt, containing the remains of an Egyptian woman who died some time before 3500 B.C., surrounded by various original artifacts found in such ancient graves, has been placed on exhibition in the hall devoted to Egyptian archaeology (Hall J, ground floor).

This type of burial preceded the development of mummification and the periods in which elaborate tombs were built. The exhibit shows a shallow pit such as was dug in the desert sands that lay beyond the fertile strip of soil deposited by the Nile. In such pits there was first placed a grass mat held together by twisted cords of flax, heavily coated with a pitchlike substance. On this rested the body, with its limbs flexed in the so-called "embryonic posture." Over the body was thrown a garment of skins pieced and stitched together with the short fur on the inside. This in turn was covered by a woven linen cloth.

A second grass mat constituted the final protection against the sand with which the pit was to be refilled after burial. The head was usually toward the south. Around the body were set jars of food and drink. Tools and weapons might also be present. Even toilet requisites were provided, such as a diamond-shaped slate palette on which cosmetics were ground with a flint pebble, which is shown in the Museum exhibit. Black-topped pottery and other equipment included in the exhibit were typical grave contents.

Early bodies such as that shown, dried by nature in their sandy pits, were often better preserved than were later ones buried within solidly built tomb chambers and more elaborately equipped. The less favorable conditions surrounding the later modes of burial led to the development of mummification, the practice of which appears to have begun under the second dynasty.

The body and the slate palette in the Museum exhibit were obtained by the late Edward E. Ayer, first President and for many years a Trustee of Field Museum. The pottery shown is from the Haskell Oriental Museum of the University of Chicago.

AN ANCIENT DELICACY

By J. ERIC THOMPSON
Assistant Curator of Central and South American Archaeology

In the literal sense, hot dogs have been eaten in America for the past three or four thousand years. They were, of course, quite different from "hot dogs" of today in the sense indicated by quotation marks.

The Mayas, the Aztecs and the natives of Cuba bred dogs in large numbers for hunting, for sacrifice—and for eating. The old native breed used as food was hairless and unable to bark. This species is referred to in the diary of Columbus. An early seventeenth century description of these dogs reads as follows:

"For want of children they (the natives) sacrifice dogges: they nourish also dogges to eate, as our nation doth conies: which dogges cannot barke, have snouts like foxes, . . . and growe marvellous fat."

Field Museum possesses (on exhibition in Hall 8) a number of pottery dogs from western Mexico, and one of them is certainly

"marvellous fat." These were found interred with the dead. The Mexican natives believed that dogs would guide them in their long journey to the next world, and usually killed a deceased man's favorite dog and buried it with him to this end. Vermilion-colored dogs were believed to be the most efficient at this task. In this connection it is interesting to note that the finest of the Museum's pottery dogs is painted bright red.

Dogs were considered very good eating, and were a favorite dish among both the Mayas and Mexican natives. The gods, too, appear to have been fond of hot dogs, for the animals were frequently sacrificed, particularly if they were appropriately marked. A dog with chocolate-colored markings, for instance, was reserved for sacrifice to Ek Chuah, the Maya god of the cacao trees.

In contrast to the dogs fattened for eating, hunting dogs were kept as thin as possible,



Pottery Dog from Mexico

Type of dog used for food by early Americans, as represented in pottery among American archaeological collections at Field Museum.

so that hunger would urge them to greater efforts when pursuing game with their masters.

8,000 AMAZONIAN SPECIMENS

More than 8,000 specimens, representing the flora of the Amazon valley, were collected by the Peruvian division of the Marshall Field Botanical Expedition to the Amazon, which has completed its work. Division Leader Llewelyn Williams, Assistant in Wood Technology on the Museum staff, returned to Chicago on May 16. Many of the specimens obtained represent previously unknown species, Mr. Williams reports. Included are many exotic woods, some of which were largely used by the Incas in building their houses and making furniture. Some of these woods are unrivaled for their beauty of color and resistance to decay.

Another division of the expedition, led by Dr. B. E. Dahlgren, Acting Curator of Botany, returned some time ago.

In the collection of his specimens, Mr. Williams made several long journeys through the equatorial forests extending to the foot of the Oriental Cordilleras of the Andes. He crossed several sierras, and followed the courses of the Amazon and some of its tributaries for thousands of miles. Traveling was done largely in native dugout canoes, and often there were stretches of five to eight days afoot, at times through totally uninhabited regions where circumstances made necessary reduced rations, and many hardships and perils. The region explored contains one of the world's richest floras, much of which has been practically unknown to botanists because of its inaccessibility.

A taxicab stand is maintained at the north entrance of the Museum.

THE NESTING BIRDS OF JUNE

By COLIN CAMPBELL SANBORN
Assistant in the Department of Zoology

June is the nesting month among birds of the Chicago area. At least seventy-five species are busy building, incubating, or rearing young at this time. Some of the hawks are just getting the young out of the nest, while seven of the warblers (yellow, prothonotary, blue-winged, prairie, oven-bird, Maryland yellow-throat, and redstart) and two of the vireos (red-eyed and warbling) are beginning to build, and to lay eggs. Fifteen of the sparrows are to be found nesting, some raising the second brood of the year, and all the swallows (six varieties) are busy with their homes. Of the flycatchers of the region, five are now nesting.

Those who wish to wade about in the cat-tail swamps can find ten species of water birds' nests. These are the king, Virginia, and sora rails, coot, gallinule, mallard (and perhaps blue-winged teal), bittern and least bittern, black tern and pied-billed grebe, the latter two with floating nests. The green heron commonly nests here, and the black-crowned night heron in restricted areas. Along the beaches the spotted sandpiper, piping plover and killdeer have their nests hidden. The upland plover nests in fields as its name suggests.

Some of the late migrating warblers and sparrows are often seen early in June, and during the month shore birds and gulls which do not breed here are met with. Most of the nesting birds of the area may be seen in the systematic series in Hall 21 of the Museum, and in Hall 20 there is a group of marsh nesting birds.

NATURE STUDY COURSES

Under the auspices of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, a nature study training course was given at the Museum last month for boy scout leaders of the Chicago Council of Boy Scouts of America. About 125 scoutmasters were enrolled in the course, which consisted of five three-hour sessions. One hour of each was devoted to a lecture by members of the Raymond Foundation staff, one hour to a discussion conference, and one hour to viewing Museum exhibits illustrating the subjects of the lecture and discussion. The course was designed to equip the men for teaching the boys who will be under their supervision this summer at various camps and elsewhere.

Dr. Hellmayr on Research Mission

Dr. C. E. Hellmayr, Associate Curator of Birds, has gone to Europe on an ornithological research mission for Field Museum. He has taken a number of rare bird specimens collected by the Crane Pacific Expedition, the Marshall Field South American Expedition, and others, for comparison with type specimens in museums of Great Britain, France, Germany and other countries.

Dr. Osgood Returns

Dr. Wilfred H. Osgood, Curator of Zoology, has returned from London where he has been engaged in research at the British Museum in connection with specimens of rare animals obtained by the William V. Kelley-Roosevelts Expedition to Eastern Asia for Field Museum.

Photographs and picture postcards of Museum exhibits are on sale at the north entrance.

HISTORY OF FIELD MUSEUM

BY OLIVER C. FARRINGTON
Curator, Department of Geology
(Continued from last month)

During the semi-decade following the year 1900, valuable additions continued to be made to the Museum collections through expeditions, gifts and purchases. Expeditions for anthropological purposes made during the period were devoted chiefly to work among the Indian tribes of the United States and Canada. The regions visited and the personnel conducting the expeditions included Curator George A. Dorsey, who made ethnological collections among the Indian tribes of Oklahoma; Assistant Curator (now Director) Stephen C. Simms, who collected among the Indians of Piman and Yuman stocks in Arizona and California and among the Crows, Chippewas and Crees; Assistant Curator C. L. Owen, who obtained ethnological and archaeological material among the Apache and Navajo Indians of Arizona; Dr. J. W. Hudson, who made extensive collections representing the basket-making and other arts of the California Indians; and C. F. Newcombe, who gathered representative material among the Indians of British Columbia and Alaska.

A series of botanical expeditions to the Bahamas and other islands of the Greater Antilles by Curator Millspaugh and associates secured large collections of the flora of those islands, many of which had never before been botanically explored.

In the collecting of paleontological material, attention was turned for a time from the gathering of fossil mammals to securing representatives of the great class of dinosaurs. Successive expeditions led by Assistant (now Associate) Curator E. S. Riggs obtained some specimens in Wyoming, and in 1901 discovered in a locality in western Colorado a large part of the skeleton of a single individual of one of the largest species of herbivorous dinosaurs. The bones found were shipped to the Museum in 1901, but it was not until 1907 that their preparation could be completed. This skeleton forms the mount now exhibited in Ernest R. Graham Hall. Although incomplete, the vertebral column, as far as found, was contiguous, and for the first time showed the true proportions of these animals. Later the great skull of the horned dinosaur, Triceratops, now in Graham Hall, was secured.

Other geological collections included Cambrian and Trenton fossils of Wisconsin obtained by Assistant Curator A. W. Slocum, and minerals and ores from North Carolina and Georgia collected by Assistant (now Associate) Curator H. W. Nichols.

Extensive trips in southern Mexico and California by Assistant Curator S. E. Meek resulted in procuring specimens of fishes and reptiles of those regions. Collections made by Edmund Heller in Sierra Nevada and Death Valley, California, afforded several new species of mammals.

In 1904 the close proximity of the Louisiana Purchase Exposition at St. Louis afforded an opportunity to select and obtain desirable objects and collections from the exhibits there. Materials obtained included large collections illustrating the archaeology of Argentina, Egypt and Mexico; valuable Maori feather cloaks and carvings; ethnological specimens from the Masai and Pygmies of Africa; musical instruments, armor and weapons from Siam; a full series of coconut products and teas from Ceylon; a large collection of Japanese timbers, waxes, camphor tree products, *et cetera*; and about eight tons of minerals and ores, of which the

most important was a comprehensive series illustrating the mineral products of Brazil, but including also similar series from nearly every state in the union and from Egypt, Bulgaria, Haiti and many other foreign countries. The opportunity was also taken to make a complete series of photographs of members of the various races and peoples gathered at the exposition. About 10,000 such negatives were made by Photographer C. H. Carpenter of the Museum.

Following the Iroquois Theatre disaster, which took place December 30, 1903, the use of the hall at the Museum which had been employed for public lectures was discontinued, as it did not conform to the safety ordinances then adopted. The lecture courses were accordingly transferred temporarily to Fullerton Hall in the Art Institute.

In midsummer of 1905, an expedition with Chief Taxidermist Carl E. Akeley in charge, assisted by Vernon Shaw-Kennedy and Edmund Heller, set out for Africa for the purpose of securing mammals and other zoological specimens. This expedition remained in Africa about fourteen months and returned with seventeen tons of natural history material. This included skins of eight lions, two elephants, six buffaloes and about twenty species of antelopes. Besides several antelope groups, the impressive group of buffaloes now in Akeley Hall resulted from this expedition.

Early in the following year, the Museum was sadly bereaved by the death of its founder, Marshall Field, who passed away January 16, 1906. Mr. Field's interest in the Museum had been keen and untiring, and his advice and counsel had been of untold value. Director Skiff records that in judging all matters connected with the Museum, Mr. Field never lost sight of the individual and considered the result which his decisions might have regarding the future of that individual, no matter how humble. All in the institution, in the words of Director Skiff, felt at his passing a solemn sense of personal loss and grief.

(To be continued next month)

JUNE GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during June:

Week beginning June 2—Monday: 11 A.M., Trees and Their Uses, 3 P.M., Roman Home Life; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Prehistoric Animals, 3 P.M., Egyptian Exhibits; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Weapons and Armor, 3 P.M., Chinese Arts.

Week beginning June 9—Monday: 11 A.M., Life in the Far North, 3 P.M., Plant Life in the Chicago Region; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Deer and Antelope, 3 P.M., Early Man; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Philippine Hall, 3 P.M., Economic Plants of the Americas.

Week beginning June 16—Monday: 11 A.M., Reptiles and Amphibians, 3 P.M., Drama in the Orient; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Gems and Jewelry, 3 P.M., South Sea Exhibits; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., South American Art, 3 P.M., Looms and Weaving.

Week beginning June 23—Monday: 11 A.M., Industrial Models, 3 P.M., Plant Families; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Bird Homes, 3 P.M., Japan; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Indians of the Southwest, 3 P.M., Animals of Plains and Deserts.

Monday, June 30—11 A.M., Madagascar, 3 P.M., Rare Animals and Birds.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

RADIO LECTURE ON AFRICA

The last of the series of six radio lectures by members of the scientific staff of Field Museum, over broadcasting station WLS (*The Prairie Farmer* station), will be given on Wednesday evening, June 4, at 7:30 P.M. Wilfrid D. Hambly, Assistant Curator of African Ethnology, who recently returned to the Museum after leading the Frederick H. Rawson-Field Museum Ethnological Expedition to West Africa, will be the speaker. His subject will be "Primitive Tribes of Angola, West Africa."

NEW MEMBERS

The following persons were elected to membership in Field Museum between April 17 and May 16:

Life Members

Henry B. Babson, Herman A. Brassert, George A. Cooke.

Associate Members

Ely M. Aaron, Alvin L. Bear, Henry H. Cross, Lester L. Falk, Charles H. Feltman, M. E. Franklin, Alexander R. Grant, Thomas S. Hammond, Mrs. L. O. Hoerr, Frank G. Hoynes, Herbert S. Huncke, George J. Jaeger, Jr., Harry S. Knox, J. Edward Matson, Mrs. Hayes McKinney, John P. V. Murphy, Mrs. Howard D. Raymond, Miss Daisy Sandidge, Chester F. Sargent, Arthur G. Wells.

Sustaining Members

Miss Shirley Jane Short

Annual Members

William B. Bangs, Maurice L. Bein, Henry P. Bruner, John A. Bunnell, Mrs. Beulah E. Burkitt, Rev. Maurice A. Dorney, Mrs. W. J. Ferguson, Charles C. Fitzmorris, John M. Frank, Mrs. Frank M. Fulton, Mrs. N. C. Gilbert, Mrs. H. P. Gunnar, Mrs. Ernst H. Hoffman, Mrs. Herbert S. Johnson, Mrs. A. S. Klein, Mrs. Tolbert L. Knecht, Miss Ophelia Krotzsch, Miss Katherine Kuehn, Mrs. John A. Logan, J. L. Maehle, Mrs. C. E. Martin, Mrs. Emil Martin, Dr. Walter George McGuire, Mrs. J. J. Merrill, Henry G. Miller, Paul Miller, Ernest I. Mitchell, Mrs. Osear E. Nadeau, Maurice J. Nathanson, Harry B. Osgood, Miss Minnie O'Sullivan, William Otter, Mrs. Lee W. Popp, George S. Porikos, Lee E. Ragsdale, Mrs. J. J. Read, Mrs. William P. Reed, Miss F. A. Reffelt, Miss Mary A. Riley, Miss Nellie E. Roberts, Andrew Scherer, Richard A. Schermerhorn, W. H. Schroll, Mrs. W. L. Sharp, Mrs. Moses M. Shaw, John B. Shay, Mrs. Robert T. Sherman, Mrs. Lionel H. Shipley,

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MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and may appoint their successors in perpetuity. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$100; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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THE WHITE RHINOCEROS

By WILFRED H. OSGOOD
Curator, Department of Zoology

The white rhinoceros is a strange animal. To begin with, it is not white and, so far as anyone knows, it never has been white. Yet white is its name and about all that can be said in explanation is that the early Dutch settlers of South Africa are probably responsible for it. They found two kinds of rhinos on the veldt, one of which they called the white and the other the black, although the difference in color between the two is rather slight.

Although closely approached by the Indian one-horned species, the white rhino is the largest of living rhinoceroses. With the exception of the elephants, therefore, it is the largest existing land mammal. Its very long head gives it a grotesque appearance, and it might well pass as some fanciful or long-extinct beast.

It is, in fact, well on the way to extinction, and if some untoward circumstance should arise, it might easily disappear in a decade. In South Africa, where it was once very abundant, it is reduced to a "mere handful," scarcely more than a dozen animals living on a private estate in Zululand. In Central Africa west of the Nile, mainly in Belgian and Sudanese territory, a small colony remains in the wild state under some legal protection, but it is quite limited and its fate is uncertain. Elsewhere it is gone, although smaller black rhinos are still common enough to furnish a thrill to nearly every hunting party that goes to Africa.

Unlike the black rhino, which is noted for its furious charges, the white or square-lipped species does not menace the hunter except upon extreme provocation and, in general, it is rather stupid and inoffensive. Its habits may have contributed to its diminution but, at least, this cannot be laid at the door of the sportsman, for it took place mostly in pioneer days before Africa was overrun with tourists and seekers of pure sport.

The white rhino which has just been installed in Field Museum is unquestionably one of the finest zoological preparations ever produced in the Museum. It is the latest result of Taxidermist Leon L. Walters' "celluloid process," and illustrates an important advantage this process has, quite aside from the matter of technique in faithfully portraying nature. This is the opportunity it provides, in the case of a very rare or valuable animal, of producing a satisfactory exhibit and, at the same time, of preserving a specimen in the reference collection, available for years to come for close examination

by students and investigators. Although the skin of the animal is used in making the exhibit, and its every detail is recorded with almost microscopic accuracy, the skin itself does not go into the exhibit but may be preserved separately in a closed case guarded against deterioration. This matters but little with common and easily replaceable animals, but with rare ones, like the white rhino, which will soon be unobtainable, it is, of course, of the highest importance.



White Rhinoceros
Now on exhibition in Hall 15

The specimen used in the preparation of this exhibit was obtained by H. B. Conover, R. H. Everard, and J. T. Zimmer during the Conover-Everard African Expedition of 1926-27. Field Museum is greatly indebted to British officials whose permission to take the specimen was courteously granted.

Reinstallation Progresses

Reinstallation of the exhibits illustrating the lives of the Indians of the Great Plains, in Hall 5, has been completed, and similar work is progressing not only in other sections of the Department of Anthropology, but also in the Departments of Botany, Geology and Zoology.

Three cases of new and reinstalled material relating to the Apaches of Arizona has been added to the exhibits in Hall 7. Included are buckskin sashes warranted to cure sickness, bring rain, make the wearer invisible and screen him from missiles of an enemy, and perform other miracles.

Important Botanical Collection

The Department of Botany of Field Museum has completed the determination of several thousand specimens of plants sent by the Botanical Museum of Copenhagen for this purpose. The collection, according to Associate Curator Paul C. Standley, is a remarkable one, made ninety years ago in Mexico and Central America by two of the earliest botanists to visit the region. The collectors never named the plants in the collection, and they had remained thus unidentified until the present time. Field Museum will receive a set of the plants which are represented.

NEW METEORITE ACQUIRED

Field Museum is now the possessor of the largest single meteoric stone ever seen to fall. This messenger from space arrived on the earth February 17, 1930, at 4:05 A.M. It fell at Paragould, Arkansas, on a farm owned by Joe H. Fletcher. The stone as received at the Museum weighs 745 pounds, being 100 pounds heavier than any previously recorded meteorite which was seen to fall. The original claim of the finder was 820 pounds, but part was lost to souvenir hunters and through other causes. In falling it penetrated hard clay to a depth of nine feet. The largest stone previously known which was seen to fall from a meteor weighs 646 pounds. This fell at Knyahinya, Hungary, June 9, 1866, at 5 P.M. It penetrated the earth to a depth of eleven feet. It is now in the Vienna Museum. The meteor which brought the stone now in Field Museum attracted attention in three states, Missouri, Illinois and Arkansas. Its light was so bright that persons in St. Louis who saw it thought it was an airplane going down in flames. It burst with detonations which were heard as far north as Poplar Bluff, Missouri, and as far east as Covington, Tennessee. The meteor came from the southwest. At Paragould nearly every one in the town was awakened by the detonations, and live stock was stampeded.

A small stone weighing eighty pounds, which fell at the same time, was discovered the next day at a point three miles distant, by a farmer who noticed earth freshly thrown for a distance of thirty feet. The stone had also made a furrow in the soil in a northeast direction. This stone was found at a depth of thirty-four inches. Finding of this stone led to a search for others and a month later, on March 16, the large mass, which weighed 820 pounds, was discovered.

The meteorite was purchased and presented to the Museum by President Stanley Field.

(Photograph on page 3)

Egyptian Pottery Lamps

Pottery lamps and jars representing the Roman period in Egypt (from about the second to fourth century A.D.) have been placed on exhibition in Hall J. Most of the lamps have single burners, but one with two and one with eight are exhibited also. Some of the lamps are of thin, hard polished ware, and are impressed with scenes from classical mythology. On others there is depicted a frog or a "frog-and-grain" design. In ancient Egypt the frog symbolized Heket, goddess of birth, while grain was associated with Osiris as an emblem of reawakening life, according to Dr. T. George Allen.

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

STEPHEN C. SIMMS, *Director of the Museum*.....*Editor*

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B. E. DAHLGREN	<i>Acting Curator of Botany</i>
O. C. FARRINGTON	<i>Curator of Geology</i>
WILFRED H. OSGOOD	<i>Curator of Zoology</i>

H. B. HARTE.....*Managing Editor*

Field Museum is open every day of the year as follows:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

In the Museum is a cafeteria where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members should inform Museum promptly of changes of address.

A VACATION SUGGESTION

Assuming what is probable, in view of the attendance records of the past several years, considerably more than one million persons will visit Field Museum this year, and thereby, it is hoped and confidently expected, profit both in the matters of enjoyment and adding to their knowledge.

Another million, more or less, will think about visiting the Museum—"some day when I have time." Perhaps you are one of the many who realize fully the advantages of visiting the Museum, and who frequently make a mental note to do so, whenever some Museum activity comes to notice through the press or otherwise, and then defer your visit until finally months pass by and it does not materialize.

Of course, as many people say to themselves, "The Museum will always be there, so why hurry?" But too often this attitude results in failure to make the desired visit at all.

If you are one of those who has failed to make that long-planned Museum visit due to actual lack of time, your opportunity is

now at hand. Vacation time is here. A mere fraction of your vacation—say a half-day—spent at the Museum will, it seems sure, amply repay you in pleasure and in intellectual stimulation. Even if you have made a visit recently, come again—additions and improvements are constantly being made, and it is safe to say that no person, in a single visit or even a series of visits, has more than begun to cover all there is here to interest him. Participate in some of the guide-lecture tours, a schedule of which is published elsewhere in FIELD MUSEUM NEWS. Members of the Museum, of course, are admitted free on all days, and other persons on Thursdays, Saturdays and Sundays. Remind your friends. Bring or send the children, too—they are always admitted free. The Museum can help to solve your problem on those vacation days when you don't know just what to do with the youngsters.

Museum Librarian Resigns

Miss Elsie Lippincott, Librarian of Field Museum, has resigned after thirty-three years of service on the staff of the institution. Her resignation, tendered on account of ill health, was accepted with regret, and became effective on June 30.

Miss Lippincott joined the staff of the Museum in 1897 as Assistant Librarian, and was appointed Librarian in charge of the Museum's Library in 1900. Her physician had advised her retirement for some time past, but she delayed the step as long as possible because of her strong attachment to and deep interest in her work, and her long association with so many members of the Museum staff.

Miss Lippincott's administration of the Library was marked by extreme ability and loyalty, and in addition she brought to her work a kindly and helpful personality which was of much assistance to members of the Museum staff and to visitors from outside whenever they had occasion to consult the books on the library shelves.

Mrs. Emily M. Wilcoxson, Assistant Librarian since 1905, has been appointed Librarian to succeed Miss Lippincott.

Gifts to the Museum

Following is a list of some of the principal gifts received by the Museum during the last month:

From John G. Shedd Aquarium—14 tropical fishes; from James J. Mooney—one plated lizard; from Stanley Field—a stone meteorite weighing 745 pounds; from Frank Vondrasek—30 specimens of minerals, concretions, flint arrowheads and spearheads; from R. T. Crane, Jr.—one decorated white jade ax, one inscribed jade slab from a jade book and three archaic jade carvings of deer, dragon and ox, China; from Moise Dreyfus—a Navaho blanket; from C. D. Mell—77 herbarium specimens, Mexico; from E. E. Sherff—23 herbarium specimens, Hawaii.

BEQUESTS AND ENDOWMENTS

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, 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,

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

ADDITIONS TO JADE COLLECTIONS

By BERTHOLD LAUFER

Curator, Department of Anthropology

Five important objects of Chinese jade were recently presented to Field Museum by Richard T. Crane, Jr., a Trustee of the institution, and will soon be placed on exhibition in the Jade Room now in course of installation. One of these is a ceremonial battle-ax carved from a grayish white jade and beautifully ornamented on both sides with conventionalized monster heads of archaic style, which are symbolic of attack. Four animal heads jut out from the edges, and the notches between them are emblematic of "the teeth of war."



Jade Battle-ax

The period and significance of this unique weapon are revealed by an inscription of eight characters in ancient style, four on the obverse and four on the reverse. This inscription reads, "Made by order of the Great Sung dynasty and bestowed upon the President of the Board of War."

The Sung emperors, who reigned from A.D. 960 to 1279, maintained ateliers in which pottery, bronzes and jades were manufactured for use in the palaces of the court or to be presented by the sovereign to deserving officials. The jade ax in question is a product of the imperial studios and was conferred by the emperor on the minister of war as a badge of office and emblem of power.

Jade slabs were used in ancient China as writing material, and documents carved in such slabs were united into books. The Museum owns such a jade book consisting of ten slabs, thirty pounds in weight, and inscribed by the emperor K'ang-hi of the Manchu dynasty. Through a lucky chance, a slab from a jade book containing the handwriting of his grandson, the emperor K'ien-lung, has now come into the Museum's possession, so that the two greatest sovereigns of the Manchu dynasty are now represented here with facsimiles of their compositions in jade.

The jade slab presented by Mr. Crane is engraved with a pair of rampant five-clawed dragons soaring in clouds and striving for a flaming pearl, the ocean and an island emerging from the waves below. The center is occupied by the title of the book, which reads, "A Dissertation on Talents and Virtues with Reference to the Counsels of Kao Yao—an Imperial Essay." Kao Yao was minister of justice to the ancient emperor Shun, and is still regarded as the model for all administration of law. His wise counsels form a chapter of the Shu king, the oldest historical book of China.

In earliest times carvings of jade were buried with the dead in the belief that this stone, regarded as the most precious jewel and as embodying the quintessence of nature, would have the tendency to preserve the body from decay and to promote its resurrection. Small figures of animals delicately carved from jade were attached to the shroud. Three very fine and rare examples of this type of the early archaic period—an elk, an ox-head, and a fish-monster—are included in the gift of Mr. Crane.

EXPEDITION TO AITUTAKI

An expedition to Aitutaki, one of the most remote and least known islands of the Pacific Ocean, to make collections of zoological material for Field Museum, sailed from San Francisco on June 11. The expedition is sponsored and led by Philip M. Chancellor of Santa Barbara, Calif. Norton Stuart, a naturalist of the same city, is co-leader.

Messrs. Chancellor and Stuart led the Chancellor-Stuart-Field Museum Expedition to the South Pacific in 1929, obtaining specimens of the rare giant lizards of Komodo, the reticulated python, world's largest snake, and other collections.

The new Chancellor-Stuart-Field Museum Expedition was to disembark from the steamer late last month at Raratonga, Cook Islands, and thence proceed to Aitutaki by trading schooner, arriving early this month. Rarely has a white man set foot upon this island, and it is sparsely populated by natives whose life is entirely unmodified by civilization.

The principal object of the expedition is to collect the beautiful fishes which abound in the waters over the coral reefs which surround the island. In connection with this work, underwater pictures, both motion and still, will be made.

Some ethnological investigations will also be conducted, and motion pictures will be made illustrating various phases of the native life.

THREE MORE MURALS

Three more of the series of large mural paintings depicting prehistoric life, being presented to Field Museum by Ernest R. Graham, have been received from the artist, Charles R. Knight, and placed on exhibition. With this addition, there are now twenty-one of the paintings on view, out of the total of twenty-eight which will comprise the series when complete. They will cover most of the wall space in Ernest R. Graham Hall of Historical Geology.

One of the new paintings just installed depicts giant long-necked sea-lizards or plesiosaurs, and so-called fish-lizards with bodies, fins and tails like fish but typical lizard heads and jaws. These creatures are estimated to have lived about 120,000,000 years ago. They were common in the old world, and in the inland sea which extended across what is now Texas, Kansas, Nebraska and the Dakotas, connecting with the Arctic Ocean.

Another of the paintings represents a scene at the Rancho la Brea asphaltum pits near Los Angeles. The painting depicts the great sabertooth tiger, driving vultures away from the tar-trapped carcasses of animals on which both want to feed. Extinct species of wolves and of horses are also shown. The animals were of the last geological period, becoming extinct about 50,000 years ago, and were closely related to similar modern animals.

The third of the new paintings restores the four-tusk mastodons and the river rhinoceroses which were common in Nebraska about seven million years ago.

PREHISTORIC PAINTS

BY HENRY FIELD

Assistant Curator of Physical Anthropology

Twenty-five thousand years ago ochre was used as paint to adorn the walls of cave sanctuaries with pictures of animals and religious symbols. It is possible that the half-naked bodies of the Magdalenian artists were also painted with the various natural colors at hand, as many primitive peoples

throughout the world paint themselves today. The color red appears to have had ritualistic properties from as far back as Aurignacian times, and it was probably associated with the conception of blood as representing the symbol of life.

The cave of Altamira in northern Spain contains the finest collection of paintings attributed to the Magdalenian artists. The ceiling is twenty-eight feet long by twenty feet wide, and upon its surface many animals, including bison, deer and wild boar have been painted in red, black, yellow and white. The artistic ability of the Magdalenians is clearly shown by the remarkable and realistic portrayal of the animals which they hunted for their food supply. Specimens of these various paints, both from deposits in the cave of Altamira and in other localities, were obtained by the recent Marshall Field Archaeological Expedition to Europe.

The polished surface of the several fragments of ochre in Field Museum's collections prove that these were actually used by the Magdalenians to decorate their caves more than fifteen centuries before the dawn of writing.

PARAGOULD METEORITE



Latest addition to the Museum's meteorite collection. On exhibition in Hall 34. It is the largest stone meteorite ever seen to fall. Presented by President Stanley Field.

(See article on page 1)

W. H. Beardsley Dies

W. H. Beardsley, for more than twenty years a member of the staff of Field Museum, and since the creation of the N. W. Harris Public School Extension of the Museum a skillful botanical preparator in that Department, died suddenly on June 17. Mr. Beardsley joined the Museum staff in 1908. He did much excellent work in the preparation of native wild flower exhibits and his loss will be keenly felt.

Expedition Reports Success

The Vernay-Lang Kalahari Expedition for Field Museum is meeting with great success in its collecting of zoological specimens in Africa, according to the latest cabled reports received by the Museum from Arthur S. Vernay, its leader. The last cablegram indicated that the expedition was at the Chobe River, preparing to proceed into the northern part of the Kalahari Desert, thence to Pretoria, and finally into Angola. Large and important collections of mammals, birds, reptiles and insects have been collected thus far in Bechuanaland.

A large collection of beautiful and characteristic marine animals, such as sponges, precious corals, and sea urchins, and the shells of various other marine fauna, is a feature of the Museum's zoological exhibits.

RAYMOND FOUNDATION PROGRAMS

The summer series of free entertainments for children at Field Museum, provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, will begin on Thursday, July 10. There will be six programs in all, on consecutive Thursday mornings, the final one being given on August 14. Programs will consist of Museum tours conducted by Raymond Foundation lecturers, motion pictures, and story hours, the latter two features being presented in the James Simpson Theatre of the Museum.

Following is the schedule:

- July 10**—10 A.M., tour: Animals of Plains and Deserts; 11 A.M., motion picture: "Chang."
July 17—10 A.M., story hour: "A Day in Japan" (illustrated with colored pictures); 11 A.M., tour: The Japanese Hall.
July 24—10 A.M., tour: Insects; 11 A.M., motion pictures: "Our Six-legged Friends," "Cabbage Enemies," "Singing and Stinging," "Honey Makers," "Baby Song Birds at Mealtime."
July 31—10 A.M., tour: Peoples of the South Seas; 11 A.M., motion picture: "Ball, the Unknown."
August 7—10 A.M., story hour: "A Trip to Eskimo Land" (illustrated with colored pictures); 11 A.M., tour: The Eskimo Hall.
August 14—10 A.M., tour: Plants and Animals Used by the Pioneers; 11 A.M., motion pictures: "The Frontier Woman," "The Story of Vincennes" (films given to Field Museum by the late Chauncey Keep).

Children from all parts of the city are invited to these entertainments. In addition to those coming individually, large groups organized in various community centers are expected.

MOUNDS TO BE EXCAVATED

Permission has been granted by the United States Department of the Interior, on the approval of the Smithsonian Institution, for the Field Museum Archaeological Expedition to Colorado, which left last month, to excavate the Lowry Ruin. This ruin is a site which to date has been untouched by archaeologists. It is in southwestern Colorado near Mesa Verde National Park, and is one of the largest ruins of its kind in the region. It consists of three great mounds, each about thirty feet high, surrounded by numerous lesser ruins of ceremonial chambers.

The expedition, led by Dr. Paul S. Martin, Assistant Curator of North American Archaeology, left Chicago on June 13. It is being financed from income derived from the Julius and Augusta Rosenwald Fund.

It is hoped that when excavations have begun on the mounds there will be revealed rooms of the first and second stories of buildings erected by Indians as far back as 1,500 years ago. The people, traces of whose culture are to be sought here, are believed to have been nearly contemporaneous with the so-called "cliff dwellers" and to have been the ancestors of the present day Indian inhabitants of the region.

It is considered likely that wooden roof beams will be found preserved intact and unrotted, because in the mound they have been sealed safely away from moisture. Evidences of two or three periods of occupancy may be found. Collections of articles in daily use by these people will be sought, such as pottery, various stone and wooden objects, and possibly turquoise beads. If the expedition obtains the right kind of timber from the buildings it may be possible to compute more closely the approximate date of construction by means of tree rings.

Work is to be carried on also in the burial grounds adjacent to the mounds, where it is hoped a collection of pottery and other mortuary offerings may be found.

HISTORY OF FIELD MUSEUM

BY OLIVER C. FARRINGTON
Curator, Department of Geology
(Continued from last month)

Shortly before the death of Marshall Field, the name of the Museum was changed from Field Columbian Museum to Field Museum of Natural History. Its scope was thus definitely limited to the four great natural sciences—anthropology, botany, geology and zoology. This change was made on account of the difficulty in correlating the diverse subjects which had been undertaken at the time of organization, and the necessity that limitations of space and interest should be observed.

The need for a permanent building for the Museum was fully recognized by Mr. Field during his lifetime, and plans which had been made for such a building were approved by him. The beauty of design of the Fine Arts Building of the exposition, which the Museum was at that time occupying, was universally recognized, and the wish was expressed by Mr. Field that the new building should follow, as far as possible, the lines and plan of that structure. By the terms of Mr. Field's will, a sum of \$4,000,000 was apportioned for the construction of the building, the site of which was to be selected within six years from the time of his death, and an additional \$4,000,000 was provided for the endowment of the institution.

The assurance of the future of the Museum which this support gave inspired all connected with the institution to new zeal and effort. The temporary cases which had, to a large extent, been used for installation of the exhibits, many of which had been constructed for exposition purposes only, were replaced as fast as possible by permanent and attractive ones.

Expeditions to more remote parts of the world were undertaken. One of these, of much importance, was that provided for by Robert F. Cummings. A fund which he presented enabled extensive explorations to be made and collections of objects gathered among the peoples of the Philippine Islands. This work was inaugurated by Assistant Curator (now Director) Stephen C. Simms, who spent five months in the islands and returned with extensive collections. Following this, F. C. Cole of the Museum staff carried on investigations and explorations in the islands for two years, during which time he gathered a large amount of material illustrative of the cultures of the non-Christian tribes, and secured important records of their customs and ceremonies.

Dr. William Jones of the Museum, who also assisted in this work, after a year spent among the remote tribes, was murdered by the natives while preparing to transport his collections to the coast. He was the first to suffer martyrdom in the work of the Museum. The scene of the tragedy was later visited by Mr. Simms, and the material and notes which Dr. Jones had prepared were recovered and brought back. A hall of the present building is now devoted to the collections made under the auspices of the Robert F. Cummings fund.

Large and important collections illustrative of the lives and customs of the inhabitants of little-known regions of the South Pacific, including New Guinea, New Britain and other islands were presented by Joseph N. Field. In order that the ethnology of these regions might be still more fully represented, Mr. Field also provided funds which enabled explorations and collecting to be carried on in continuance of their study and

representation. Expeditions for this purpose were conducted by Assistant Curator A. B. Lewis, for four years. The collections thus obtained by gift and exploration now fill a large hall of the present Museum building.

Through funds provided by Mrs. T. B. Blackstone, a special expedition to China and Tibet was conducted by Assistant Curator (now Curator) Berthold Laufer. Dr. Laufer spent three years in those countries and obtained very extensive and valuable collections representing important phases of the culture and history of the peoples of eastern Asia. More than 10,000 objects were collected on this expedition and these, with later additions, occupy two halls of the present building.

A number of successive trips to Egypt by Edward E. Ayer, of the Board of Trustees, resulted in the acquisition of a large amount of material illustrative of early Egyptian life and customs. The most important of these were two large and very complete Mastaba tombs from the Necropolis at Sakara, Egypt. One of these was presented by Martin A. Ryerson. Besides these, a number of jars, statuettes, and mortuary vases were procured, all forming an important part of the present exhibits in the Egyptian hall.

In 1906 D. G. Elliot retired from the position of Curator of Zoology and was succeeded by C. B. Cory, who had been Curator of Ornithology; the Departments were then combined. Ornithological collections obtained in this period included some made by expeditions to Guatemala and Venezuela carried on by Assistant Curator N. Dearborn, and in Saskatchewan and Venezuela by J. F. Ferry. Collections of fish and reptiles were made by Assistant Curator S. E. Meek in Guatemala and the Tortugas. Botanical collecting was continued in the Bahamas by Curator C. F. Millsbaugh, and conducted in Mexico by Assistant Curator J. N. Greenman.

In 1909, H. N. Higinbotham retired from the presidency of the Museum. He was succeeded by Stanley Field, whose tenure of that office happily still continues.

(To be continued next month)

Illinois Central suburban trains and South Shore Line interurban trains both stop at the Roosevelt Road station of the Illinois Central, within easy reach of the Museum.

NEW MEMBERS

The following persons were elected to membership in Field Museum between May 17 and June 16:

Life Members

Mrs. Lewis L. Coburn, William M. Collins.

Associate Members

Miss Cornelia Conger, George P. Fisher, Paul M. Godehn, Mrs. William C. Grunow, Miss Marie Heldmaier, Mrs. Charles Pratt Hulbert, Mrs. Sidney Kaiser, David S. Komiss, Mrs. Wellington Leavitt, Dr. Siegfried Maurer, Mrs. David Mayer, Herbert N. McCoy, Mrs. W. L. Phelps, E. W. Rinder, Arthur H. Thompson, A. W. Torbet, Mrs. John H. Volk, Mrs. August von Glahn.

Sustaining Members

Seth MacDonald Gooder, John Eliot Warner, C. Roy Warren, William H. Wienhoeber.

Annual Members

Max Balaban, R. D. Bartlett, Mrs. F. C. Bradbury, Mrs. Ralph E. Clark, Mrs. A. B. Culley, A. M. Davis, Miss Edith Froebe, Jevne Haugan, Mrs. Andrew F. Heckler, Frank J. Hurley, Louis Loeser, Mrs. Philip B. Maher, Edward Martin, Robert J. Neidlinger, Mrs. William S. Norris, Mrs. William J. Nye, Mrs. Simon O'Donnell, Frank Hugh O'Reilly, Mrs. Minnie S. Price, Sterling L. Redman, Mrs. Leo S. Samuels, Miss Ethel W. Seed, Walter A. Sheriffs, Edwin Silverman, Mrs. Harold B. Simonds, Dr. F. J. Smith, Sidney H. Smith, Mrs. W. W. K. Sparrow, Mrs. J. M. Stiefer, Miss Sarah E. Sutcliffe, Mrs. Eugene S. Talbot, Jr., Arthur E.

JULY GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibition halls at the Museum during July:

Week beginning June 30—Monday: 11 A.M., Madagascar, 3 P.M., Rare Animals and Birds; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Crystals and Gems, 3 P.M., Eskimo Life; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: Holiday—no tours.

Week beginning July 7—Monday: 11 A.M., Egypt and Kish, 3 P.M., North American Animals; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Indian Costumes, 3 P.M., Habitat Groups; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Moon and Meteorites, 3 P.M., Textiles.

Week beginning July 14—Monday: 11 A.M., Systematic Animals, 3 P.M., Palms and Cereals; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Sea Life, 3 P.M., Musical Instruments; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Reptiles, Past and Present, 3 P.M., Pewter and Cloisonné.

Week beginning July 21—Monday: 11 A.M., Chinese Exhibits, 3 P.M., Birds of Summer; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Roman Home Life, 3 P.M., African Animals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Mines and Ores, 3 P.M., South American Archaeology.

Week beginning July 28—Monday: 11 A.M., Plant Families, 3 P.M., Early Man; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Japanese Exhibits, 3 P.M., Games and Toys; Thursday: 11 A.M. and 3 P.M., General Tours.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

Noted Scientist Is Visitor

A distinguished visitor entertained at Field Museum last month was Dr. Thomas Barbour, Director of the Museum of Comparative Zoology, Cambridge, Mass.

Professor Record Honored

Professor Samuel J. Record, Research Associate in Wood Technology on Field Museum's botanical staff, received last month an honorary degree of doctor of science conferred by Wabash College.

Sculptor Blaschke Finishing Group

Frederick A. Blaschke, sculptor of Cold Spring-on-Hudson, New York, is finishing a life-size group representing the Mesohippus, one of the small early species of horses, for Field Museum. The group will soon be installed in Ernest R. Graham Hall.

Taylor, Mrs. Samuel Tobin, Edward George Todt, Mrs. D. K. Tomajan, Mrs. Alice Tuska, Mrs. Emma Uhrig, Miss Margaret G. Valentine, Mrs. W. H. Van Doren, Mrs. G. M. Vaughan, Erwin Wagner, B. E. Ward, Mrs. W. H. Warner, William R. Watson, Mrs. W. H. Watterson, C. Fred Weed, Dr. F. P. Whetzel, Algot A. Wickland, Mrs. Christopher J. Wilson, Mrs. Joel R. Wilson, E. G. Woods, Mrs. C. B. Woodworth.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Persons who give or devise \$5,000 are elected to Fellowships, and may appoint their successors in perpetuity. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$100; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary and Patron, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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No. 8

A LIFE-SIZE RESTORATION OF THE THREE-TOED HORSE, MESOHIPPUS

BY ELMER S. RIGGS
Associate Curator of Paleontology

A life-size group, representing a species of small three-toed horses which lived in North America millions of years ago, was completed at Field Museum in July and is now on exhibition. So far as is known this is the first group restoration of extinct mammals,

and the outward markings of the animals have been reproduced for life-like effect.

The painted background, a reproduction of a scene in the Black Hills of South Dakota where these animals were fairly common in their day, is the work of Charles A. Corwin, Museum staff artist. Messrs. Blaschke and Corwin had the scientific advice and super-

Field Museum. The bones are so well preserved that they show every mark for the attachment of ligament or tendon, the outlines of every muscle, the small openings for the passage of nerves or blood vessels, and the minutest pattern and tracery of every tooth. Study of this wealth of fossil remains has made it possible to assure the utmost



Copyright, Field Museum

Group presented by Ernest R. Graham, now on exhibition in Hall 38. Modeling by Frederick Blaschke. Background by Charles A. Corwin.

represented as in life and in the surroundings amid which they lived, which has been produced anywhere.

The group is a gift to the Museum from Ernest R. Graham, member of the Board of Trustees, who is sponsor for a comprehensive program whereby scenes and types of life which have existed on the earth at various periods, from as far back as one and one-half billion years, are to be shown. The new group is the latest step to be executed in this program, which is now well under way in Ernest R. Graham Hall of Historical Geology.

The group was designed and modeled by Frederick Blaschke, sculptor, of Cold Spring-on-Hudson, New York, who was responsible also for the Neanderthal man group opened in Graham Hall last year. Six figures—two full-grown males, one male colt, and three mares—compose the Mesohippus group. The models are based upon a comparative study of fossil skeletons of this animal, in relation to the anatomy of modern animals. They have been faithfully prepared after profound study and consultation with a number of leading authorities on extinct animals. For the first time, the skin, hair,

vision of the Curator and other members of the staff of the Department of Geology of Field Museum during creation of the group.

Valuable assistance and cooperation were also given by Professor Henry Fairfield Osborn, president of the American Museum of Natural History, New York, and Professor William Diller Matthew of the University of California. Field Museum takes this opportunity to thank these eminent authorities who are foremost among scientists conducting research in connection with extinct horses.

Mesohippus was no larger than a collie dog. He had three toes on each foot, fore and hind. Each toe bore a small hoof. The little horse fed upon leaves and fleshy plants. He was alert, keenly sensitive of eye and ear, and he ran swiftly to escape the wolf and saber-tooth tiger which preyed upon his kind.

Mesohippus is known from fossil remains found in the bad lands of Nebraska and South Dakota, and in other states. Many petrified skulls and frequently entire skeletons have been recovered, which are now preserved in various institutions including

accuracy in the construction of the Museum's Mesohippus group.

Fossil remains of a species of Mesohippus were first discovered in 1850 by Joseph Leidy, the pioneer authority on fossil animals of America. Some years later Professor O. C. Marsh, of Yale University, determined that this animal was an ancestor of the modern horse. The line of descent of the horse family was then definitely established through Mesohippus and other fossil horses belonging to earlier and later geological periods. Mesohippus became known familiarly as the "three-toed horse." Before him had lived others, smaller and less horse-like; after him came a long line of descendants, growing taller and more fleet-footed until finally came the horse as we know him.

Mesohippus lived in the Great Plains region when it was but little elevated above the level of the sea. The Rocky Mountains were then more abrupt than now. The Sierras had not yet risen high enough to cut off the moisture-laden winds from the Pacific. Plenteous rains fell upon the eastern slopes, and a most variegated

(Continued on page 4)

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

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H. B. HARTE	<i>Managing Editor</i>

Field Museum is open every day of the year during the hours indicated below:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

There is a cafeteria in the Museum where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members are requested to inform the Museum promptly of changes of address.

FIELD MUSEUM LIBRARY

Too few people, including even Members of Field Museum, realize that this institution has a fine library containing more than 92,000 books and pamphlets, many of them rare, on natural history subjects, and that this library is available to the general public for reference. If this were better known, the Library could perform a far greater public service, as there must be thousands of people in Chicago who have occasion from time to time to seek information on various subjects within the scope of the volumes on its shelves. The collection of books on anthropology, botany, geology and zoology in Field Museum Library is one of the most important of its kind in the middle west.

Members of the scientific staff of Field Museum, of course, make frequent and repeated use of the Library in connection with their work, the number of references by the staff averaging between 400 and 500 each month. But as to visitors to the Library from outside, there were in 1929 less than one thousand, while during the same year the

general attendance at the Museum reached the record figure of 1,168,430.

This editorial is to remind Members of the Museum that this Library is available to them, and to invite them to use it at all times that it can be of service. It is suggested, too, that Members call the attention of their friends and relatives, especially anyone whom they may know who might have more than ordinary use for the Library facilities—such as students, teachers and researchers—to the fact that they will be welcome to the Museum's Library at any time when they may have need of information within its field.

NAVAHO SILVER JEWELRY

BY PAUL S. MARTIN

Assistant Curator of North American Archaeology

Navaho silver work is almost as well known as Navaho blankets are. For many years these Indians have had among them skilful silversmiths. The art, as practised by them, while primitive in character, was probably derived from contact with the Spaniards or Mexicans.

Field Museum recently acquired, as a result of a purchase made with part of the income of a fund provided by Julius Rosenwald and the late Augusta N. Rosenwald, a fine representative collection of silver ornaments made by Navaho Indians. This collection has just been placed on exhibition in Hall 6. With the addition of material previously presented by the late Edward E. Ayer, and other material obtained by a Museum expedition, it illustrates well the high type of handiwork the Navaho silversmiths were able to achieve.

Formerly United States silver currency was extensively used for making these ornaments, but more recently Mexican silver coins have furnished the Navaho artisans with the kind of metal they needed. Many of the buttons, bracelets and earrings which are on display were beaten from cold metal. Some of the other objects were shaped in part from ingots cast in molds.

The Navaho show a high degree of imagination when engaged in producing designs for their ornaments. Many of the silversmiths use no instruments of precision, but depend entirely upon the eye for accuracy.

Gifts to the Museum

Following is a list of some of the principal gifts received during the last month:

From Fred Lewis—one black rhinoceros skin; from Clement Hull—one milk snake and ten red-bellied snakes; from Dr. K. K. Chen—six Chinese toads; from Miss Pauline L. Williams—one sand picture and one specimen banded sandstone; from Charles B. Clark—ten specimens glauconite, calcareous tufa and Mexican onyx; from Myer H. Moss—a Navaho blanket; from Jardin Botanique de Buitenzorg, Java—a piece of trunk of sago palm and eight specimens of sago in stages of preparation.

BEQUESTS AND ENDOWMENTS

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 named by the giver. For those desiring to make bequests, 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,

.....

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

THE SPINY-BACKED EEL

BY ALFRED C. WEED

Assistant Curator of Fishes

In the growing of rice it is necessary to keep the land flooded most of the season. When harvest time comes this water is drawn off and the ground becomes more or less dry. At this season the Chinese farmers harvest also a crop of fishes that have come to live in the shallow, warm water of the fields. Among other things, they catch large numbers of small creatures that look like eels except that they are flattened from side to side instead of being round, like most eels. They are called by a name that means "mud eel," and are a favorite food in the places where they are found. Their scientific name is *Mastacembelus*.

These "mud eels" are interesting to scientists because they possess characteristics that are generally supposed to belong to very different groups of fishes. Down the back they are armed with a row of very strong, sharp spines. At the front of the head they carry a "trunk" much like that of an elephant, and nearly as large in proportion. Like the elephant, this fish has its nostrils, or part of them, in its trunk. The trunk is used as a feeler to test out things in its path. Perhaps it may also be used, in some cases, to help catch the worms and other small creatures of the water and the mud, on which the fish feeds. At least it is a flexible, muscular organ and is waved around by the fish in the same way an elephant waves its trunk.

There are at least fifty species of these eels found in muddy waters of the tropical streams and lakes from western Africa to eastern Asia and in the larger islands of the East Indies. Most of them are small and of little value unless they are eaten near where they are caught. Some have been brought to Europe and America as aquarium pets.

Among the collection of fishes made last year by the Chancellor-Stuart-Field Museum Expedition in the Ogan River of Sumatra are two specimens of these strange fish that are both large and showy. The larger one is more than two feet long, boldly striped and spotted with red and yellow on a dark ground color, and must have weighed several pounds when caught. One of these specimens is being prepared and will soon be on exhibition in the Museum's collection of mounted fishes.

Rainbow Snake

An unusually fine specimen of the rainbow snake, native to the southeastern United States, has been received at Field Museum. Aside from its own rarity, the rainbow snake is of special interest because it is a prototype of the mythical hoopsnake, according to Karl P. Schmidt, Assistant Curator of Reptiles. Many people will solemnly and sincerely swear they have seen one of these rolling along with its tail in its mouth, and will also aver that it has a sting in its tail.

The museum's rainbow snake arrived here alive, and is to be reproduced by Taxidermist Leon L. Walters in the now well-known cellulose-acetate process which he invented and developed during the course of his duties at Field Museum. The snake is a beautiful creature, whose skin contains most of the colors of the rainbow, arranged so as to form remarkable designs.

The rainbow snake lives in swamps. It is harmless, and, of course, stingless, despite the hoopsnake story. The reason people may have associated it with the fabled hoopsnake is that it makes exploring motions with its tail. A specimen has long been desired for the Museum's collections.

HISTORY OF FIELD MUSEUM

BY OLIVER C. FARRINGTON
Curator, Department of Geology
(Continued from last month)

With the accession of Stanley Field to the Presidency of the Museum, the selection of a site for a new building began to be actively considered. It was generally felt that a site near the center of the city would be preferable to that in Jackson Park, since it would make the Museum more readily accessible from all parts of the city. In order to obtain this desired end it seemed probable that a site in Grant Park could be secured, but on proposing this, opposition developed on the part of some of the owners of property adjoining the park. Legal steps were taken to determine what rights could be obtained, with the result that the proposed site at the central portion of the park was not granted.



Stanley Field

For a time it seemed likely that the new building would be erected on the site of that already occupied in Jackson Park, and some preparations were made for the erection of the building there. These were carried on to the extent of removing the collections of the Department of Geology from the west annex of the building to the central part. Further negotiations, however, enabled the present site to be secured.

Meanwhile the work of enlarging and improving the collections and exhibits was continued. An important line of work in the Department of Botany was inaugurated in 1909. This was the establishment of facilities for modeling plants, flowers and fruits in natural colors and permanent form. The services of Dr. B. E. Dahlgren of New York City, now Acting Curator of Botany, were secured. Through his skill and art and that of his associates, and the generous and continued support of President Field, the beautiful reproductions, to which the Hall of Plant Life in the Museum is now largely devoted, were made.

In 1911 the work of collecting fossil mammals was renewed, and an expedition in charge of Assistant, now Associate, Curator Elmer S. Riggs spent a season in Utah which resulted in obtaining a remarkable series of extinct species of mammals from strata of one of the early periods. Valuable collections of invertebrate fossils were also made during this year at several North American localities by Assistant Curator A. W. Slocum. In the same year an important line of work was inaugurated through an endowment created by Norman W. Harris of Chicago. This fund had for its purpose an extension of the work of the Museum to the Chicago public schools. By means of this fund a much closer connection of the Museum with the public schools was established than had been heretofore obtained. The work has continually increased in importance and extent and has become a prominent feature of the institution. In 1912 Assistant Curator, now Director, Stephen C. Simms was appointed head of this Department—the N. W. Harris Public School Extension of Field Museum. The work of the Department consists of preparing

and circulating among the schools traveling exhibition cases of natural history and economic material.

Expeditions to Venezuela, Colombia and other parts of South America were made by Assistant Curator, now Curator, Wilfred H. Osgood, and many new species of the birds and mammals of the regions visited were secured. During the period of the construction of the Panama Canal, exhaustive collections and studies of the fishes of the Isthmus were made by Assistant Curator S. E. Meek, who was accompanied by S. F. Hildebrand of the United States Bureau of Fisheries. Curator C. F. Millspaugh of the Department of Botany, in a trip to several Oriental countries including the East Indies, obtained many plants and plant products suitable for exhibition purposes.

In 1913 a notable accession was obtained by the acquisition of the Ward-Coonley collection of meteorites. This collection, the largest private one of these celestial visitors ever made, gave, when combined with the extensive collection previously possessed by the Museum, a world leadership in the assemblage of these bodies. In another field of mineralogical interest, yearly contributions by W. J. Chalmers of the Board of Trustees have gradually built up one of the finest collections of mineral crystals in the world. Beginning in 1900, through a fund contributed for an exhibit of crystals at the Paris Exposition, continued contributions by Mr. Chalmers have enabled a collection of great value to be made.

Activities of the Museum during this period were, however, by no means confined to the collecting and acquisition of specimens. A number of the large bird groups now occupying one of the Museum halls were prepared at this time. They included the wild turkey, pelican, condor, whooping crane, blue heron, loon and birds of Laysan Island groups. These, as well as the Mexican bear, American antelope and beaver groups, all constructed during this period, were the work of taxidermists of the present Museum staff, Julius Friesser and L. L. Pray. The backgrounds were by Charles A. Corwin, also a member of the present staff. Models of a Philippine village and of Philippine ironworkers and pottery makers were made by C. A. Gardner and others. The series of models now in Frederick J. V. Skiff Hall, representing the development of the iron blast furnace, and a model of a twenty-stamp gold mill, were constructed by Assistant, now Associate, Curator H. W. Nichols and many fossil mammal exhibits were prepared by Assistant, now Associate, Curator Riggs, J. B. Abbott and others.

(To be continued next month)

A BIT OF LUNAR MYTHOLOGY

BY BERTHOLD LAUFER
Curator, Department of Anthropology

Of the astral bodies the moon, from times immemorial, was the first to arouse the attention and to fire the imagination of primitive man. Lunar mythology is older than solar mythology. According to an ancient Chinese myth, the material universe was created from the body of Pan-ku, the first man—a sort of demiurge. From his breath arose the wind, from his voice thunder; from his right eye was formed the moon, from his left eye the sun; vegetation grew out of his hair, rivers flowed out of his blood.

In the dualistic philosophy of the Chinese all phenomena of the world were attributed to interaction of two principles called *yang* and *yin*, the former being the male or positive

principle, the latter the female or negative principle in nature. The sun as light and heat giver was *yang*, while the moon represented the female principle. The mid-autumn festival celebrated on the fifteenth day of the eighth month is devoted to worship of the moon and is a popular holiday.

A Chinese metal mirror of highly artistic quality, made in the seventh or eighth century A.D. under the T'ang dynasty, and recently presented to Field Museum by Mrs. Charles Schweppe of Chicago, is decorated with a scene wrought in high relief, which depicts ancient Chinese notions of the moon. The center of the ornamented surface is occupied by a large tree. This is the sacred cassia which blossoms in the autumn and emits an exquisite fragrance; it is also reputed to possess powerful medicinal virtues. The cassia believed to grow in the palace of the moon makes the human body immortal. Beneath the cassia is a hare seated on its hind legs and pounding in a mortar herbs that will form the ingredients in an elixir of eternal life. The hare in the moon is an old mythical concept both in ancient India and China. The luminous property of the moon is ascribed to the agency of the hare. At the lunar festival clay figures of hares are given to children, so that the lunar hare plays a role similar to our Easter rabbit.

To the left of the hare is another inhabitant of the moon, a toad—not by any means an ordinary toad, but a supernatural one, long-lived and believed to grow horns at the



Chinese Metal Mirror

Design depicts ancient ideas about the moon. The mirror is a gift from Mrs. Charles Schweppe.

age of three thousand years and to cause the eclipses of the moon by swallowing her. This toad is regarded as the transformation of a beautiful woman, Ch'ang O by name, who was the wife of a famed archer. The latter had received from the queen of paradise the elixir of immortality. His wife filched the precious beverage, fled to the moon, and was changed into a striped toad.

A dragon and a phoenix are also represented on the mirror. Besides a goddess of the moon, the Chinese recognize a man in the moon, who is worshiped as divine matchmaker. All marriages are prearranged in heaven or ordained by fate, and the Old Man of the Moon ties with red cords the feet of children destined as future spouses. The marriage contract is accompanied by two needles joined by a red thread. At the wedding ceremony bride and groom drink wine from twin cups fastened together by a red cord. The moon is the guardian of lovers, and in Chinese poetry is as much the object of sentimental thoughts as in our own.

RESTORATION OF MESOHIPPUS

(Continued from page 1)

vegetation grew there in great abundance. Forests of deciduous trees lined the rivers far out upon the plains, and meadows green with rushes and other succulent plants tempted the animal life out into the open. Many species of warm-blooded mammals reveled in a genial climate and in the abundant food of these well watered plains.

A center of this life was the Black Hills region which rose in the midst of the plains. From time to time volcanic disturbances arose in the hills. Clouds of volcanic ash and dust fell upon their slopes and were borne by the wind out upon the adjacent plains. Animals which had died previously, or which were killed during these eruptions, were buried in this accumulation of ash, silt, and sand.

Streams bore this burden away, and scattered it along their courses. The flesh decayed and left no trace, but the skeletons thus covered over became petrified during the long ages in which they remained buried.

The conditions for such preservation were especially favorable. No entire system of animal life has elsewhere been so well preserved as in this bad land burial plain. In later ages rains and other streams cut and furrowed the hardened sediments of plain into rugged hills and gulches. In this process the petrified skeletons of ancient animals were laid bare to tempt the paleontologist with pick and shovel who came upon them in modern times.

AN EQUATORIAL FOREST

By LLEWELYN WILLIAMS

Assistant in Wood Technology, Department of Botany

[Editor's note: The following vivid impressions of an equatorial forest far in the interior of the Amazon valley were jotted down by Mr. Williams while penetrating regions seldom if ever before entered by white men. Mr. Williams was leader of the Peruvian division of the Marshall Field Botanical Expedition to the Amazon.]

Perpetual summer. An eternal twilight. Crowding, struggling vegetation—bananas, pineapples, mangos, coconuts—a marvelous profusion of rainbow-colored flowers—endless forests of mahogany, cedar, ironwood, snakewood, bloodwood, reaching from the Atlantic shore to the Andean Cordilleras, where the tangled maze of multitudinous branches and twisted vines shuts out the sun's rays. This is the equatorial forest of the Amazon valley, which few men's eyes have had the privilege of seeing.

The gloom of dusk penetrates one's soul; the dark solitude causes a depression and melancholy in him who wanders here. Or, in the obscurity, another mood may be engendered—one of startled amazement at the beauty of the green tapestry created by the lonely forest. Here one is truly in close communion with Nature. Here one finds a dazzling splendor exceeding anything of which poet or painter ever dreamed.

One is forcibly struck by the slow but constant movement of all things. The heavy humid atmosphere brings oppression to even the most exuberant of adventurers. Here is contact with the very soul of Nature.

All is not friendship in this realm of Nature. Amid the dense jostling mass of trunks, vines, and aerial roots a fierce warfare rages eternally, in which only the fittest survive. High overhead the interlacing and mingling of branches of the tall trees is so confused that it is difficult to determine to what particular tree a leaf may belong. Each tree exerts all its energy to spread more foliage than its neighbors, in

order to gain a greater share of the life-infusing rays of the sun. All are striving towards elevating their uppermost twigs where the sun can reach them.

Nowhere else in the world are such enormous climbing and scrambling plants as in these equatorial forests. There is no time to rest for tree, shrub, or plant. No tree desiring to live dares sleep. Existence demands alertness. "Find the sunlight or perish" is Nature's command, and to obey it every tree clothes its branches in a suit of green leaves. Many of the trees protect themselves against insect and fungoid pests by secreting bitter juices, whilst some, as if instinctively guided, guard themselves against ravages of enemies by forming an alliance with certain insects, to which they afford a home on trunk, branch or leaf.

One is fascinated by the fantastic parasites and the variety of vines, some of them slender threads and others python-like masses, now round, at other times flattened, and some twisted with the regularity of man-made steel cables.

The marvelous fact about these forests is the great variety and multitude of all living things. For all to survive seems to be an impossibility in this congestion. Yet, whether tree or bush, mammal or reptile, bird or insect, every individual that attains maturity seems to survive to old age.

RAYMOND FOUNDATION PROGRAMS

Two more of the summer series of free entertainments for children at Field Museum, provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, remain to be given during August.

On Thursday, August 7, the program will consist of a story hour at 10 A.M. and a conducted Museum tour at 11 A.M. The subject of the story hour will be "A Trip to Eskimo Land," illustrated with colored pictures, and the tour will be in the Museum's Eskimo hall.

The final program of the series, on Thursday, August 14, will include a tour of exhibits of plants and animals used by the pioneers at 10 A.M.; and at 11 A.M. motion pictures in the James Simpson Theatre of the Museum. Titles of the films, which are a gift to the Museum from the late Chauncey Keep, are: "The Frontier Woman" and "The Story of Vincennes."

NEW MEMBERS

The following persons were elected to membership in Field Museum between June 17 and July 14:

Life Members

Thomas M. Boyd, George R. Carr.

Associate Members

Phil C. Barber, Mrs. William Evana Casselberry, Sr., Mrs. Thorne Donnelly, W. J. Goodman, E. V. Graham, Mrs. Walter P. Hemmens, Dr. William E. Holland, Oswald W. Huncke, Louis G. Jacobs, Edward J. Lang, Mrs. Arthur F. Lindley, Max McGraw, Leopold B. Melnick, Miss Emma Nollau, Mrs. Kersey Coates Reed, Mrs. Walter Rompel, Arthur Schwanke, Joel Starrels, Everett A. Thatcher, Mrs. Condit Voorhees.

Sustaining Members

A. J. Knopf, Mrs. Clarence Olsen.

Annual Members

Ernest V. Abbott, Frederick P. Bodinson, Norton A. Booz, Karl S. Breckenridge, Mrs. Gordon Buchanan, Mrs. Henry N. Cooper, Mrs. H. P. Fitzpatrick, James R. Fitzpatrick, Howard F. Gillette, Mrs. F. P. Hufty, Mrs. F. A. Hurd, George Karnes, Mrs. Edward F. Kenyon, Mrs. Fred C. Koch, G. E. Marshall, Mrs. H. L. Monroe, Miss M. Eleanor Moore, Mrs. Ernest C. Pawley, Mrs. William H. Pruyn, Jr., Mrs. A. P. Smith, Edmond B. Stofft, Frank E. Swanson, Louis F. Theurer, Miss Eva M. Thomlinson, Albert D. Tighe, Mrs. C. Thomas M. Timberlake, Mrs. Edgar V. Titus, Mrs. C.

AUGUST GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibits during August:

Friday, August 1—11 A.M., Primitive Armor and Weapons, 3 P.M., Beverages.

Week beginning August 4—Monday: 11 A.M., Coal, Peat and Petroleum, 3 P.M., Sumatra, Java and Borneo; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Chinese Art, 3 P.M., Asiatic Animals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Primitive African Art, 3 P.M., Systematic Birds.

Week beginning August 11—Monday: 11 A.M., Economic Minerals, 3 P.M., Philippine Native Life; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Egyptian Life, 3 P.M., Horses Through the Ages; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Snakes and Their Relatives, 3 P.M., Indians of the Plains and Deserts.

Week beginning August 18—Monday: 11 A.M., Dwellers in the Far North, 3 P.M., Birds of Tropical Lands; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Gems and Gem Lore, 3 P.M., The Tibetans; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Basketry, 3 P.M., Marine Animals.

Week beginning August 25—Monday: 11 A.M., Etruscan and Roman Exhibits, 3 P.M., Animal Life in the Great Lakes Region; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Man Through the Ages, 3 P.M., Prehistoric Animals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Ancient Burials, 3 P.M., Game Animals.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

New Rose Described

In the July number of the *Journal of the Arnold Arboretum* Dr. Alfred Rehder has published a description of a new rose, *Rosa Stevensii*, which was collected by the William V. Kelley-Roosevelts Expedition to Eastern Asia for Field Museum.

Rubiaceae Determined

A collection of 500 specimens of plants of the madder family (Rubiaceae) was received recently by Field Museum on loan from the Royal Museum of Stockholm. The collection has been determined by Paul C. Standley, Associate Curator of the Herbarium, who found in it several new species besides material of many rare ones.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Contributors give or devise \$5,000. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$100; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary, Patron, and Corresponding, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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KIVA REVEALED ON LOWRY RUIN

By PAUL S. MARTIN

Assistant Curator of North American Archaeology;
Leader, Field Museum Archaeological
Expedition to the Southwest

The Field Museum Archaeological Expedition to the Southwest has been excavating on the large Lowry ruin, located in southwestern Colorado. Superficially this ruin looked like a large mound covered with rocks and broken pieces of pottery. In order to find just where the walls were located it was necessary to dig a deep trench, 400 feet long and ten feet wide. In the course of excavating this trench many interesting things came to light. It seems that the site now covered by the Lowry ruin was inhabited many times during the past three thousand years, for in this trench were discovered houses and ceremonial buildings of at least three different periods or cultures. In the older dirt-walled rooms were found ancient fire-pits filled to the brims with white wood-ash.

When finally the walls were struck, one could see that they had been constructed by experienced masons, for instead of depending solely upon the adobe or mud mortar to hold the individual stones in place, these primitive builders had also inserted small, flat rocks between the courses of masonry to act as chinking stones and strengtheners.

So much dirt had to be removed that it became necessary to install mine railroad tracks and a mine dump-car. As the debris was removed from the rooms proper it was shoveled into a chute under which stood the empty car. With this system, all dirt from the most distant rooms must first be excavated and moved; otherwise dirt and rocks will fall back into the cleared rooms. In this instance the farthest room is a kiva or ceremonial chamber.

Ancient kivas are generally round and usually very interesting to dig out. This kiva was particularly attractive because later work disclosed the fact that it had been built on top of another older ceremonial room.

The floor of the upper kiva had sagged considerably due to the fact that the lower room had not been properly filled in. Great was the surprise when we found that still adhering to the walls of the upper room were fragments of paintings which had not seen the light of day for probably well over a thousand years. These paintings were entirely geometrical and had been executed in black and white. Even greater was our surprise to find that the paintings on the walls of the lower kiva were perfectly preserved. The design there is one that is commonly seen on many pieces of prehistoric pottery and may represent rain, lightning or clouds. So far as is known at present, this is the first example of such a design on a kiva wall. Fortunately also many of the original roof beams are in place. The tree rings of these beams, it is hoped, will indicate the age of this large ruin.

Burial grounds for several of the early villages have been excavated with great success. Up to the present more than eighteen burials have been carefully uncovered. These burials have yielded thirty pieces of pottery of a very excellent type.

The expedition is financed with income derived from the Julius and Augusta Rosenwald Fund.

At Botanical Congress

J. Francis Macbride, Assistant Curator of Taxonomy, who has been in Europe since the beginning of the year to obtain photographs of type specimens of tropical American plants in European herbaria, was assigned last month as Field Museum's representative to the section of nomenclature of the International Botanical Congress at Cambridge, England. Llewelyn Williams, Assistant in Wood Technology, represented the Museum at the Congress' informal conference on woods. Professor Samuel J. Record, the Museum's Research Associate in Wood Technology, attended the Congress as the representative of Yale University.

MAMMALS FROM INDO-CHINA

Field Museum has received a large collection of mammals from French Indo-China collected by Jean Delacour, the well-known French naturalist. The collection has been submitted by M. Delacour for study and report by Dr. Wilfred H. Osgood, Curator of Zoology. When this work has been completed the specimens will be divided among Field Museum, the British Museum (Natural History), and the Paris Museum of Natural History.

The animals are from regions adjoining the territory covered last year by the William V. Kelley-Roosevelts Expedition to Eastern Asia for Field Museum, and the report on them will be combined with the one on the collections of that expedition. The Delacour collection is a very important supplement to the Kelley-Roosevelts material, and adds greatly to the representation in Field Museum of the important fauna of that part of the world. There are 900 specimens in the collection, all from regions which the Kelley-Roosevelts Expedition was unable to visit.

Of outstanding interest among the Delacour specimens is one of a new species of black monkey with a white back. There are also several new species of squirrels and other rodents, and a small deer which may prove to have been hitherto unknown.

M. Delacour also made a large collection of birds, of which one-third has been purchased by Field Museum.

New General Guidebook

A new edition of the General Guide to the Collections in Field Museum has been published and is now on sale.

Bus Service to the Museum

The Chicago Motor Coach Company's No. 26 busses (Jackson Boulevard Line) operate directly to the entrance of Field Museum. Free transfers are issued between these and all other lines of the company on north, south, and west sides.

Unusually Complete Fossil Fish-lizard on Exhibition in Ernest R. Graham Hall

A remarkably complete and excellent fossil skeleton of an ichthyosaurus or fish-lizard which lived about 150,000,000 years ago, the specimen possessing the unusual feature of including in the slab of stone in which it is imbedded a clear impression of the fins and the skin, has been received in the paleontological division of the Department of Geology.

The specimen was found in a stone quarry in Bavaria in which lithographic shales are secured.

The block of stone in which the fossil was concealed split directly along the skeleton.

The specimen is of a comparatively young fish-lizard, being about four feet long, where-

Associate Curator of Paleontology Elmer S. Riggs. The ichthyosaurus was an animal with



Ichthyosaurus Skeleton

as full-grown ones are known often to have attained a length of ten feet, according to

a fish-like body, tail and fins, but with a long snout similar to that of a gar pike. Its jaws contained many sharp teeth with which it was able easily to prey upon fishes and other marine creatures.

The specimen has been placed on exhibition in Ernest R. Graham Hall of Historical Geology.

A mural painting by Charles R. Knight representing this animal as it ap-

peared in life can be seen adjacent to the specimen. It was presented by Mr. Graham.

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

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Field Museum is open every day of the year during the hours indicated below:

- | | |
|------------------------------------|---------------------|
| November, December, January | 9 A.M. to 4:30 P.M. |
| February, March, April, October | 9 A.M. to 5:00 P.M. |
| May, June, July, August, September | 9 A.M. to 6:00 P.M. |

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and apical entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

There is a cafeteria in the Museum where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members are requested to inform the Museum promptly of changes of address.

A PHASE OF MUSEUM WORK

Shortly after the return of any expedition, many Museum visitors ask to see exhibits of material collected by it. They are usually surprised to learn that it may require several months, or in some cases one to three years, before the exhibits can be prepared. The creation of an exhibit that is both attractive and scientifically accurate is a special art full of complexities of which the average person little dreams. It requires a great deal of time, and the utmost in patience, care and skill.

As the principal aim of Field Museum is to disseminate knowledge, it is important that the institution shall maintain the highest standards of accuracy. At the same time the element of beauty is also an important factor in many exhibits.

In each Department it is required that everyone concerned in the preparation of exhibits, from the Curator supervising the task down to the various artisans specializing in the different operations necessary, shall devote meticulous attention to every detail, however small. The time thus spent is

regarded as well worth while since it insures that nothing shall go on exhibition until it has been subjected to the most careful preparation, and has been approved after rigid inspection by competent authorities.

Especially laborious and time-consuming are the preparations necessary in the case of certain zoological and botanical exhibits. In a habitat group of animals, for example, a small scale model must first be made; the skins of the animals must be cleaned and otherwise prepared; models or manikins upon which the skins are to be mounted must be made; the mounting must be so performed as to give the animals a lifelike appearance; a scenic background must be painted with due regard to perspective and to lighting; and accessories for the foreground such as trees, shrubs, rocks, and representations of water, mud, snow, and ice must be prepared.

In botanical exhibits, the preparation of reproductions of plants and flowers by the processes employed in the Stanley Field Plant Reproduction Laboratories of the Museum is necessarily a slow task, requiring the greatest painstaking. The work is practically all done by hand, and thus a plant with many leaves and flowers may take months to prepare as its various small parts are carefully reproduced with such materials as fabrics, wax, paint, wire, and glass.

Similarly in the Departments of Anthropology and Geology many specimens require weeks and months of work before they are ready for the exhibition halls. Often anthropological objects are received in fragments, which must be carefully pieced together; or ancient objects come in covered with a heavy patina which must be removed before their real significance can be disclosed. Likewise, the bones of prehistoric animals often can be obtained only in fragments which must be fitted together, and various other geological specimens, such as mineral specimens and meteorites, must be subjected to various laboratory tests to determine their character or establish their authenticity.

On a smaller scale than in the other Departments, but with the same care and patience, are prepared the traveling exhibition cases circulated among the schools of Chicago by the N. W. Harris Public School Extension of the Museum.

Sometimes roentgenology is employed in studying specimens. In all Departments a great deal of time must be spent in research in order that labels for exhibits may be prepared with all the essential information presented in brief form.

RAGWEED AND HAY FEVER

With the hay fever season here, interest has been aroused in the Museum's models of the two most common ragweeds of this region, recently placed on exhibition in the Hall of Plant Life (Hall 29). The abundant ragweed pollen which is liberated at this time of the year and spread through the atmosphere by winds, is held responsible for the annoying hay fever affliction which attacks thousands of persons annually. The pollen, adhering to the mucous membrane of the respiratory tract, acts as an irritant producing an inflammation in many people resembling in effect an ordinary cold.

The species illustrated in the Museum are the common ragweed which is believed to be the principal producer of hay fever pollen, and the giant ragweed. The common variety is one of the most abundant of weeds, growing almost everywhere. It has rather finely divided leaves, and does not usually grow to more than a few feet in height. It causes trouble on dairy farms because cows some-

times eat it with the result that their milk acquires a bitter taste. The giant ragweed is a huge coarse plant growing to heights of four to even fifteen feet. It occupies so



Common Ragweed Exhibit—Hall 29

much room and feeds so grossly that other plants growing with it are crowded and starved out. In the vicinity of Chicago there are acres covered with nothing but the rank growth of this plant.

Gifts to the Museum

Following is a list of some of the principal gifts received during the last month:

- From American Friends of China—one painting on silk representing a cockfight, Sung period, and one rhinoceros-horn with carved animal figures, Ming period (fifteenth century); from J. A. Skelton—Chorotegan stone figure; from Miss Lida A. Pittman—prehistoric Indian shell bead necklace; from Mrs. Leonora S. Curtin—107 herbarium specimens of plants; from William J. Chalmers—29 specimens crystallized minerals; from K. Z. Wilking—six specimens petroleum and four specimens oil sands; from Walter H. Smith—27 specimens fossil plants; from John T. Zimmer—two Grey's bats; from the British Museum (Natural History)—four mice and one bat; from Myer H. Moss—one weathered boulder resembling an elephant head.

BEQUESTS AND ENDOWMENTS

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 named by the giver. For those desiring to make bequests, 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,

.....
.....
Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 59 relating to income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

THE GOLDFISH

BY BERTHOLD LAUFER
Curator, Department of Anthropology

A short while ago I read a play written by an American who is a distinguished physician and gifted poet. The plot of his drama is laid in ancient Greece; and Empedocles, a Greek physician, in depicting the quiet atmosphere of a certain spot in Athens, is made to say, "The very goldfish in the fountain do not stir." I wonder how many readers would be struck by the fact that this statement is a rather crude anachronism; for



Chinese Goldfish Bowl

Rare blue and white porcelain bowl made in two pieces and decorated with lotus leaves. End of seventeenth century. On exhibition in Hall 24.

no goldfish was ever known in ancient Greece, nor anywhere else in Europe, down to the end of the seventeenth century.

Goldfish made their first appearance in England in the year 1691, having been imported from St. Helena. They had come to St. Helena from Batavia, and Chinese settlers who emigrated to Java had brought them along as a reminder of their home country.

Charles Darwin already knew that our goldfish hailed from China, and registered his belief that it has been kept in confinement there from an ancient period. This belief is well founded, and is strongly supported by Chinese records that furnish abundant evidence to this effect. The goldfish is a native of China and still occurs in her rivers in a wild state. It has been brought by the Chinese not only into a complete state of domestication, but also the numerous varieties and the many fantastic and grotesque monstrosities with protruding eyes or with three and four lobed tails are the product of Chinese skill and industry. These varieties were produced not by chance, but by a studied and conscious method of interbreeding.

The experiments to which Chinese fanciers have subjected the fish ever since the eleventh century are practically identical with those carried on by our modern biologists. At that early date they understood the principle of "breeding to a point" to perfection. To hear a Chinese goldfish breeder talk about his schemes and methods reminds one of Darwin and evolutionary theories.

The interesting point about the goldfish is that its domestication has not been actuated by any utilitarian motives, but is solely due to the esthetic tendencies of the Chinese. They have a highly cultivated sense of what is beautiful in nature, which delights in the bright coloration, the graceful forms, and the restless motions of this nimble little creature. In the same manner, the goldfish makes a strong appeal to our own esthetic sense and joy in nature. Moreover, it is of

intense biological interest and a source of endless surprise, as the plastic material of which it is shaped can, within certain limits, be molded into almost anything under the hands of a skilful breeder.

The great variability in the coloring of the skin, as well as in the form of the head, fins, and tail, is the result of many centuries of domestication. The color of the goldfish when first hatched is black. This black pigment disappears in about a year or less to give way to bright colors, which are of various shades between carmine and vermilion and finally assume a golden or silvery hue. In April or May, when the females spawn, the color of the skin turns more brilliant than ever. The Chinese breeders are able to control the time of deposition of eggs.

In China the goldfish is kept in garden ponds or in large pottery or porcelain basins, but never in glass globes such as are used in America. Rocks covered with moss and overgrown with tufts of fern are placed in the basins to provide a cool spot and a retreat from the sunlight. In Buddhist monasteries goldfish are great favorites and kept as pets by the monks who feed them regularly.

Field Museum has on exhibition in Hall 24 a rare and beautiful specimen of a seventeenth century blue and white porcelain jar for goldfish. It is made in two pieces and decorated with lotus leaves. The Museum possesses also a number of Chinese paintings of goldfish.

PREHISTORIC OWLS

BY HENRY FIELD
Assistant Curator of Physical Anthropology

In the cave known as "Trois Frères," which goes deep into a mountain side in the south of France, Count Begouen and his three sons have discovered paintings and drawings by prehistoric artists who lived more than twenty-five thousand years ago.

One of the most interesting drawings shows two small owls which had been scratched by the artist on the wall of one of the large galleries inside the cave. These two little birds are depicted sitting on the limb of a tree looking with wide open eyes at him who dares to break the age-long silence and awaken them from their centuries of total darkness within the cave.

The prehistoric artists only rarely drew or painted birds within their magico-religious sanctuaries, and this is one of the most important examples yet discovered.

Thanks to the kindness of Count Begouen, a photographer, M. Barrèyre, was allowed to take for Field Museum the first set of photographs ever made within this fascinating cave, during the course of investigations conducted by the recent Marshall Field Archaeological Expedition to Europe.

Rare Lizard Is Stowaway

Arriving unheralded from south Texas, after making the trip north as a stowaway in a crate of lettuce, an extremely rare plated lizard has been received at Field Museum. The lizard, the scientific name of which is *Gerrhonotus infernalis*, is one of the only two species in its genus which had been previously missing from the Museum's collections, according to Karl P. Schmidt, Assistant Curator of Reptiles. It was presented to the Museum by James J. Mooney of Deerfield, Illinois, who obtained it from a local grocer into whose store it emerged from the crate of lettuce.

Texas plated lizards grow to a length of about one foot. Their most familiar relative is the so-called glass snake, which, having no limbs, is frequently confused with snakes although it is a true lizard.

THE LONG-HORNED SCULPIN

BY ALFRED C. WEED
Assistant Curator of Fishes

Those who fish in the harbors or along the shore from Long Island Sound to the Gulf of St. Lawrence are sure to catch many strange creatures. Some will be prized for their beauty and others for their delicate flavor. Some will not be valued at all unless for the possibility that they may be used as bait for something else. The long-horned sculpin is in the latter class. A big head, ornamented with many sharp spines, and a mouth large enough to swallow objects much larger than the small body are hardly things of beauty. The average fisherman does not see the delicately blended colors that change as freely as those of a chameleon, or the beautifully flowing lines of the fins.

In spite of their armament of spines the sculpins are not very quick to attack. They prefer to lie quietly and depend on their color to hide them. When really attacked they use the method of defense sometimes credited to Chinese soldiers of the old regime: they make themselves look especially vicious. Spreading the sides of the head so that the eyes are partly hidden and the spines are made as prominent as possible, the mouth is stretched in a diabolical grin and every fin is spread to the fullest extent. In this position every muscle is so tense that the whole fish quivers with the strain. On the deck of a boat this position may be held for as much as a quarter of an hour.

The color changes of these northern fish are just as complete and just as striking as are those of the fishes of the tropical reefs. When lying in the shelter of a dark rock, covered with barnacles and ornamented with pink, brown or green plants or animals, the sculpin will have a dark ground color with



Long-horned Sculpin

Prepared so as to show its most diabolical aspect. Soon to be placed on exhibition.

spots of white, pink, brown and green. On a patch of green "sea lettuce" it will be all green. On brown kelp it will be all brown. On white sand it may be almost as pale as the sand and seem to be simply a raised place on the ocean bottom or it may be very dark and look like a stone. In any case it will be almost perfectly hidden.

Field Museum recently received some very excellent specimens of the long-horned sculpin from the Marine Biological Laboratory at Woods Hole, Massachusetts. Two of them have been prepared and will soon be placed on exhibition. One is shown in the ordinary swimming position. It is as pale as it would be if about to settle down on a patch of white sand. The other is reproduced in a position that shows extreme disapproval of its surroundings and, both in color and in pose, looks as one would appear if it had just been violently removed from the water.

HISTORY OF FIELD MUSEUM

BY OLIVER C. FARRINGTON
Curator, Department of Geology
(Continued from last month)

Even before the site of the new Museum building had been determined, the materials for its construction were being prepared. As early as 1914 Director Skiff reported that the greater part of the steel required had been prepared, and of the marble necessary more than one-half had been quarried and cut.

The location of the Museum site in the area south of Grant Park necessitated a large amount of filling, since the elevation there at the time was thirty feet below the height proposed for the ground floor of the new building. This work was not completed until the latter part of 1916, and the filling and grading of the surrounding area required several years more for its completion. However, all energies were directed toward carrying on the work in every direction as rapidly as possible and plans for the final arrangements of the halls, laboratories, offices, work-rooms, *et cetera*, were carefully worked out.

Devotion of interest and energy to plans for the new building naturally lessened opportunities available for expeditionary work, but the preparation of groups, especially those of birds, was actively continued. The Walrus Island bird group was completed in 1914, and the flamingo, Venezuelan screamer and ibis groups in 1915. These were all the work of Taxidermist L. L. Pray. The model of a gold mine, made by Assistant, now Associate, Curator H. W. Nichols, was also completed in 1915. Preparation of units of the North American forestry exhibit was also continued, twenty-three of these units being completed and placed on exhibition during 1915.

Expeditions included one to Brazil by R. H. Becker, who obtained mammals and birds in the states of Minas Geraes and Bahia, and at Trinidad collected material for the oil-bird group. An expedition to South America financed and participated in by A. M. Collins and L. G. Day was also carried out in this period, R. H. Becker acting as collector for the Museum. From Mollendo, Peru, the party went overland to Cochobamba, Bolivia, then followed the Mamore and Madeira rivers to the Amazon. Thirteen hundred specimens of birds and mammals were secured, and were equally divided between Field Museum and the American Museum of Natural History, New York. An expedition in the same year to the Olympic Mountains by Taxidermist Julius Friesser procured the specimens for the large elk group which is now on exhibition. In 1915 G. A. Dorsey retired from the position of Curator of Anthropology, and the present incumbent, Berthold Laufer, who had been successively Assistant, Associate and Acting Curator in the Department, was appointed Curator.

At the close of the Panama-Pacific Exposition, held in San Francisco in 1915, a number of valuable and interesting exhibits were secured from exhibitors there. These included a series of pagodas, some of which are exhibited in the south corridor of the present building, other Chinese material, a well-arranged and instructive exhibit of by-products of coal presented by the London (England) Gas Company, a restoration of a giant Moa from New Zealand, and a large variety of ores and minerals from Bolivia, China, Japan, Greece and other countries.

Exhibition groups completed at the Museum during the year 1916, included those of the Alaska moose, the largest single group that had been made up to that time, and a

group of birds of northern Brazil. Activities of the Department of the N. W. Harris Public School Extension included an exhibit at the San Francisco Exposition, and the completion of 476 cases for use in the schools.

By the year 1917 progress in the construction of the new building had advanced so far that on September 28 the corner-stone was laid in the presence of a group of the Trustees and executive officers of the Museum. A pension fund for Museum employes was also provided at this time through an endowment contributed by President Field.

Conditions brought about by the World War being waged during this period unavoidably affected, more or less, the various activities of the Museum. Public attendance fell off considerably, and the dangers and difficulties of travel limited the possibility of expeditions. However, the preparation of bird groups was continued and the groups of winter birds of Illinois, shore birds of Lake Michigan, and bird life at Fox Lake were completed during 1917.

By 1918 enough progress had been made in the construction of the new building to permit the gradual dismantling of exhibits and their preparation for removal. To a large extent, therefore, from this time on for several years the activities of the Museum force were chiefly concerned with these tasks. During 1919 a donation by Trustee James Simpson enabled the beautiful audience hall in the Museum, now known as the James Simpson Theatre, to be constructed and furnished according to the most approved designs.

By the opening of the year 1920 the exhibits in the Jackson Park building had been so far withdrawn for packing and preparation for removal that on February 23 of that year, the Museum was closed to the public, to remain closed until the new building and exhibits there should be made ready.

(To be continued next month)

INDIAN EXHIBITS REINSTALLED

Reinstallation of the exhibits in James Nelson and Anna Louise Raymond Hall (Hall 4), representing chiefly the Indian tribes of the upper Mississippi valley and the Great Lakes region, has been completed. A large amount of material never before exhibited has been added to the collections, and the old exhibits have been much improved. The former black screens have been replaced with the newly adopted screens in light colors, and all labels have been reprinted on buff cards in black type.

Tribes represented in the hall include the Potawatomi who inhabited the Chicago area, and the Sauk, Fox, Menominee, Ojibwa and Winnebago. Much of the newer material was obtained several years ago by an expedition sponsored by Julius and Augusta N. Rosenwald. For the first time there is now exhibited a good collection of sacred and ceremonial objects such as medicine bundles, charms, and other such objects used by the former Indians of the Chicago region.

Of outstanding interest in the hall are the medicine lodge records in birch bark collected by Director Stephen C. Simms (when he was a member of the staff of the Department of Anthropology) among the Ojibwa of Minnesota. This is one of the best collections of its kind in existence, and includes records of songs, medicine lodge rituals, and individual records. The Ojibwa developed a form of incised pictographic record more nearly like writing than anything else that has originated in North America.

GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibits during September:

Week beginning September 1—Monday: Labor Day holiday—no tours; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Korea and Siberia, 3 P.M., Fishes of Many Kinds; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Cave Dwellers, 3 P.M., Chicago Animals.

Week beginning September 8—Monday: 11 A.M., China, 3 P.M., Gems and Jewelry; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Egypt, 3 P.M., Prehistoric Animals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., South America, 3 P.M., Bird Habitats.

Week beginning September 15—Monday: 11 A.M., Dinosaurs and Other Reptiles, 3 P.M., Roman Hall; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Indians of Plains and Plateau, 3 P.M., Rare Birds; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Fire-making and Cooking Utensils, 3 P.M., Animals of Stream and Pond.

Week beginning September 22—Monday: 11 A.M., Woodland Indians, 3 P.M., Oriental Theatricals; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Mummies, 3 P.M., Economic Minerals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Peoples of the Pacific, 3 P.M., Horned and Hoofed Animals.

Monday, September 29—11 A.M., Melanesia, 3 P.M., African Animals; Tuesday: 11 A.M. and 3 P.M., General Tours.

New Fossil Collection

A collection of fossil insects and plants, and other paleontological material, was made during the summer in the vicinity of Florissant, Colorado, by a Museum expedition in charge of Bryan Patterson of the Department of Geology. Excavations were conducted on several sites, and a large variety of specimens was uncovered. Among the collections have been found a number of previously unknown species.

NEW MEMBERS

The following persons were elected to membership in Field Museum between July 15 and August 16:

Life Members

Aldis J. Browne, Mrs. A. A. Sprague II.

Associate Members

William R. Bowes, Mrs. William Albert Gilchrist, Mrs. J. M. Glenn, H. L. Harker, J. Howard Helfrich, Mrs. Fred Hertz, C. G. Kropff, Mrs. W. J. Lang, Ben B. Linton, Albert S. Louer, Mrs. Walter G. McIntosh, John A. Senne, John F. Spohn, Mrs. Carl B. Stibolt, S. P. O. Swenson, Mrs. Harry L. Thomas, Mrs. John R. Thompson, Mrs. T. E. Wilder, Sr., Mrs. George L. Wilkinson.

Sustaining Members

James Morrison, Miss Laura Alice Vignes.

Annual Members

Dr. C. R. Belding, Frederick H. Bradsford, William A. Brewerton, Mrs. George A. Davis, Father Charles Fani, Edward R. Harrison, Mrs. Helen M. Huebsch, Edward T. Lee, Miss Martha Jane Mellen, Mrs. George R. Mitchell, Albin O. Osterling, Mrs. I. W. Schutte, Walter E. Sergeant, Mrs. Annie G. Stoll, J. J. Sutton, Mrs. Ada R. Thompson, Mrs. A. H. Thorpe, Herbert Tiffen, Mrs. J. H. Vaill, James Z. Van Winkle, Mrs. Felix Victor, John P. Voight, Walter S. Vose, George B. Waterstraat, Miss Josephine A. Wendell, Thomas H. West, Miss Bertha M. White, Miss Laura G. White, Mrs. Theodore Wilken, Harvey S. Williams, Mrs. Dean M. Workman, Charles H. Wyman, Dr. Rachele S. Yarros.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000. Contributors give or devise \$5,000. Life Members give \$500; Non-Resident and Associate (Life) Members pay \$100; Non-Resident Associate (Life) Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate (Life) Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary, Patron, and Corresponding, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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COCKFIGHTS

BY BERTHOLD LAUFER

Curator, Department of Anthropology

A rare old Chinese painting representing a cockfight was recently acquired by Field Museum with a fund donated by the American Friends of China, Chicago. This painting, executed in delicate colors on an ancient, much worn-out silk, had been kept for centuries in a private collection in Japan, where it was attributed to Li An-chung, an artist of the Sung period, who lived in the twelfth century. It bears the earmarks of this period in drawing, style, and coloring.

No less than forty-six figures of men are shown dramatically grouped around the cockpit, a circular arena marked by stakes rammed into the ground and covered with cloth. Two powerful roosters in the pit are the combatants, one seeking safety in flight, while the other eagerly takes up his pursuit. Two other fighting cocks are being carried by men in their arms, and two more are being transported in large hampers toward the arena to show their prowess in the next match. The attention of the crowd, however, is not concentrated on the contest. Their heads are turned upward, watching a bird on the wing way up in the air, which has just been hit by an arrow. The arrow has been discharged by a dignified official seated on a bench opposite the cockpit, accompanied by an attendant who holds a quiver containing five arrows. Probably he

is the umpire of the game and the owner of the cowardly rooster, and as such has some reason to distract the attention of the spectators from the issue of the struggle.

Cocking is a sport of ancient date in China, being traceable to at least the sixth century B.C., and has been a favorite pastime of many emperors and of idle youths. In like manner, the sport was cultivated in ancient Cambodia, Java, Sumatra, India, Persia, Greece and Rome. In all these countries cockfights were conducted merely as a popular amusement accompanied by heavy betting. The originators of cockfights probably were the Malaysians among whom the sport has developed into a veritable passion. In the beginning it was connected in the Malayan area with religious ideas. The fighting roosters represented village and tribal communities and their chiefs, and the contest of the cocks, regarded as divine birds, was a sort of ordeal which decided the superiority of a community.

Egyptian Dice

Dice from ancient Egypt, dating back to the Greco-Roman period, are on exhibition in Hall J of the Museum. Most of them are made from bone, but some are of steatite. In size, form and arrangement of the number combinations they are almost identical with modern dice. One specimen, however, has the numbers paired in different combinations.

CHILD SACRIFICE AT KISH

BY HENRY FIELD

Assistant Curator of Physical Anthropology

During the excavations conducted by the Field Museum-Oxford University Joint Expedition at Kish, in the Babylonian levels which are attributed to the middle of the first millennium before the Christian Era, numerous pot burials containing children were unearthed. The burial jars had been placed along the walls of the more important buildings, and it seems plausible to suggest that these babies may have been sacrificed to propitiate the gods in whose honor the buildings were erected. The majority of the babies were female.

Another curious discovery was made during work in the mound which contained an important Babylonian library of sun-baked tablets in cuneiform script. Slipper-shaped coffins of baked clay were found near the walls of the buildings and beside several of the sarcophagi were the skeletons of dogs. This suggests the possibility that the favorite animal was buried beside his master to accompany his soul to the spirit world. Several small dogs were buried beside children, and these animals may have watched and guarded the primitive cradles. When a child was put to premature death as a sacrifice to the gods, the dog was also sacrificed and buried beside his playmate so that he might continue to protect him in the world beyond the grave.

Ghoul-like Animals Haunting a Death Trap 50,000 Years Ago



Mural painting restoring prehistoric scene at Rancho La Brea asphaltum pits. Presented by Ernest R. Graham and on exhibition in Hall 38. Charles R. Knight is the artist.

The above photograph shows one of the recent additions to the series of large mural paintings by Charles R. Knight, depicting prehistoric life, presented to the Museum by Ernest R. Graham. This painting represents a scene at the famous Rancho La Brea asphaltum pits near Los Angeles, which until only a few years ago continued to be a death trap for unwary animals. To the

right of the center, saber-tooth tigers are seen devouring the tar-trapped carcasses of victims of the pit, while one of them is driving away huge vultures which also seek to feed on the carrion. At the left are seen wolves of an extinct species, and in the background at the right are a number of prehistoric horses. These animals were all of the last geological period, becoming extinct

about 50,000 years ago. They were closely related to similar modern animals. This painting is one of the twenty-one now to be seen in Ernest R. Graham Hall of Historical Geology (Hall 38). When complete, the series will consist of twenty-eight paintings, and will cover most of the wall space. As far as possible the paintings are placed adjacent to fossils of animals which they represent.

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

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Field Museum is open every day of the year during the hours indicated below:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

There is a cafeteria in the Museum where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members are requested to inform the Museum promptly of changes of address.

A REQUEST TO MEMBERS

Enclosed with this issue of FIELD MUSEUM NEWS will be found an application form for membership in Field Museum, which it is earnestly hoped present Members will pass on to such of their friends as they think might be interested.

The more Members Field Museum has, the greater will be the services it can perform for all of its Members, and for the public at large. Thus by assisting the Museum in increasing its membership, a Member is not only helping the institution, but is augmenting the value of his own individual membership. On the other hand, by being a Member, and by assisting in obtaining other Members, he is aiding in making it possible for greater benefits to be derived by the general public from an important civic educational enterprise. Possession of a membership in the Museum is an indication of the holder's public spiritedness.

It is believed that there are thousands of people in Chicago whose interest in scientific matters, in the betterment of educational facilities, and in the furtherance of all

cultural activities in this city, would lead them to become Members of Field Museum except for the fact that they are unaware that such memberships are available. It is in the hope of reaching many of these and bringing to their notice what the Museum has to offer its Members, and what membership means, that the enclosed application is being distributed. The assistance of present Members is solicited, because it appears likely that they, more than anyone else, would be in contact with the type of people to whom possession of a membership in the Museum might appeal.

HUGE LODESTONE EXHIBITED

An extraordinary specimen of lodestone, weighing more than 400 pounds, and possessing unusual magnetic power has been placed on exhibition in Clarence Buckingham Hall (Hall 35) of the Museum. This huge natural magnet comes from the Wasatch Mountains in Utah.

Lodestone led to the invention of the magnetic compass in the twelfth century. The stone is that variety of the mineral magnetite which has the property of attracting



Large Natural Magnet

A powerful lodestone, weighing more than 400 pounds, now on exhibition in Clarence Buckingham Hall (Hall 35). Its magnetic effect is shown not only by the iron objects in actual contact with it, but by a nail at the left suspended in the air on a string without touching the stone.

iron. A steel needle placed in contact with a lodestone will in a short while become so magnetized that if free to move it will point toward the north pole. It was observance of this fact that suggested the compass. Displayed with the new Museum specimen are a number of metal objects which illustrate its effect.

The attraction of the lodestone for iron was known hundreds of years before the polarity of the mineral was discovered, according to Dr. Oliver C. Farrington, Curator of Geology. Thales of Miletus (630-550 B.C.) mentions this power of the mineral as do a number of the later Grecian sages. There is a fable that the discovery of the lodestone was made by a Cretan shepherd who noticed that his iron-pegged sandals and iron-shod crook clung to the earth. Digging into the ground he found lodestone.

In classical times and during the Middle Ages, extravagant fables based upon a misconception of the power of the lodestone were current. There were tales of magnetic domes which held statues of iron and even of brass suspended in the air, and there were accounts of mountains of lodestone which drew all the iron nails from ships which ventured near them so that vessels sailing those seas were obliged to use wooden pegs in place of nails.

Discovery of the compass has been attributed to many peoples of Europe and Asia.

Many accounts of the early use of the compass are now believed to be mythical. One such probably mythical tale credits the Chinese Emperor Hoan-ti with constructing, in the year 2637 B.C., a chariot on which was a female figure which always pointed south, and there are other Chinese accounts of the use of these "chariots of the south" at various times antedating the Christian Era.

There are some statements by European authors of the first centuries of the Christian era which possibly indicate an occasional use of the compass as early as the third century, but the first authentic records of its use do not antedate the twelfth century. The compass was certainly not extensively utilized for more than a hundred years before the first trustworthy description of it was given by Guyot de Provenes, who was a contemporary of Frederick Barbarossa (about A.D. 1200). He describes a floating needle which had been rubbed with lodestone. Shortly after his time the compass came into general use by mariners.

The first compasses were magnetized steel needles which were fastened to chips or reeds and floated upon water. The pivoted modern form, however, soon replaced the floating type. A curious type of compass was used in A.D. 1242 in the Indian seas. This was a hollow iron fish which swam on the surface of water and pointed north and south.

A New Indiana Tree

Recently Professor Samuel J. Record, Research Associate in Wood Technology, and Associate Curator Paul C. Standley discovered near Chesterton, Indiana, a grove of staghorn sumac trees that seem to have escaped the attention of botanists. The grove consists of more than a hundred trees, some of which are forty feet high and more than twenty-five inches in circumference. Mr. C. C. Deam, who published the admirable volume upon the trees of Indiana, knew the staghorn sumac only as a shrub. The discovery of the present grove therefore represents an interesting addition to the list of Indiana trees.

Practically all plants of Illinois, and more than 600,000 specimens of plants from all parts of the world, are contained in the herbaria of Field Museum.

Gifts to the Museum

Following is a list of some of the principal gifts received during the last month:

From James A. Skelton—a pre-Columbian carved stone ring; from William B. Pitts—ten specimens, polished, of oolitic and orbicular jasper; from Robert Fuller—one specimen of opalized wood; from Herman L. Schurg—four specimens pressure structure in sandstone and one specimen chert concretion; from Professor J. K. Strecker—224 shells (Unionidae); from Dilipat Singh—one Himalayan bear skin, skull and skeleton.

BEQUESTS AND ENDOWMENTS

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 named by the giver. For those desiring to make bequests, 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,

.....

Cash contributions made within the taxable year to Field Museum not exceeding 16 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

AUTUMN LECTURE COURSE BEGINS OCTOBER 4

Field Museum's fifty-fourth free lecture course will begin on October 4. Nine lectures on science and travel, illustrated with motion pictures and stereopticon slides, will be given by eminent explorers and naturalists, in the James Simpson Theatre of the Museum on successive Saturday afternoons, the series ending on November 29.

All lectures will begin at 3 P.M. Admission is free. Following is the complete schedule of dates, subjects and speakers:

October 4—Picturesque Japan

Horace E. Coleman, Chicago (a resident of Japan for more than twenty years)

October 11—Primitive Tribes of Angola, Portuguese West Africa

Wilfrid D. Hambly, Assistant Curator of African Ethnology, Field Museum; Leader, Frederick H. Rawson—Field Museum Ethnological Expedition to West Africa

October 18—Botanical Collecting along the Upper Amazon

Llewelyn Williams, Assistant in Wood Technology, Field Museum; Leader, Marshall Field Botanical Expedition to Peru

October 25—Madagascar and Her People

Dr. Ralph Linton, Professor of Anthropology, University of Wisconsin (Leader, Marshall Field Ethnological Expedition to Madagascar)

November 1—On Horseback to the Glacial Age

Walter L. Payne, Department of Public Instruction, Washington, D. C.

November 8—Archaeological Explorations in the Maya Field and a Description of the Aztec and Maya Hieroglyphic Writings

Dr. Sylvanus G. Morley, Carnegie Institution of Washington

November 15—Will Insects Displace Man?

Brayton Eddy, Providence, R. I.

November 22—Siam and Indo-China

H. C. Ostrander, Yonkers, N. Y.

November 29—With Pinchot in the South Seas

Howard Cleaves, Pinchot South Sea Expedition

No tickets are necessary for admission to these lectures.

GIANT PREHENSILE-TAILED SKINK ON EXHIBITION

BY KARL P. SCHMIDT
Assistant Curator of Reptiles

To one familiar with prehensile tails only as a peculiarity of monkeys and opossums it is at first surprising to learn that this useful adaptation to climbing has also been acquired by certain lizards. Two American lizards, one in Jamaica and one in Colombia, both belonging to the iguanid family, employ their tails in true monkey fashion. The only other lizard with a prehensile tail is found on the other side of the world, in the Solomon Islands, and it represents an entirely different family of lizards—the skinks.

This prehensile-tailed skink (*Corucia zebtrata* Gray) of the Solomons is a much larger lizard than either of the American species. It reaches a length of more than two feet. Its perfectly flexible and strongly prehensile tail is the more remarkable in that other members of its family all have fragile tails, and all the skinks are encased in a bony armor underlying the scales.

These Solomon Island lizards live an arboreal life, rarely descending to the ground. They inhabit hollow trees, in which they are somewhat gregarious, three or four specimens being found in a single hollow. They climb sluggishly about, feeding on the leaves of the forest trees. They are well known to the natives who use them for food.

A reproduction has been made of a fine specimen of this species of skink which was

brought from Ysabel Island in the Solomon group by the Cornelius Crane Pacific Expedition of Field Museum in 1929. This reproduction has just been placed on exhibition in Albert W. Harris Hall (Hall 18). It is an excellent example of the extremely life-like cellulose-acetate models made according to the process invented and perfected by Leon L. Walters of Field Museum's taxidermy staff. This process makes possible better preparations of certain animals, such



Giant Skink

Reproduction of giant prehensile-tailed skink, obtained by Cornelius Crane Pacific Expedition of Field Museum, and now on exhibition in Albert W. Harris Hall (Hall 18).

as reptiles, and hairless mammals of the hippopotamus and rhinoceros type, than can be accomplished by mounting the skin.

A MODERN HORSE'S ATTITUDE TOWARD THE MESOHIPPUS

An amusing incident of a modern horse's reaction upon encountering a restoration of one of his tiny three-toed predecessors of some thirty million years ago is told by Frederick Blaschke, the sculptor who created the Mesohippus group recently installed in Ernest R. Graham Hall of the Museum.

Mr. Blaschke has a studio on a farm-like estate near Cold Spring-on-Hudson, N. Y. After completing one of the small prehistoric horse figures (about the size of an average collie dog in accordance with Mesohippus fossil skeletons) he placed it on a grassy patch to test out its appearance against a rural background.

An old farm horse belonging to Mr. Blaschke eyed his master's work suspiciously. In the past this horse had completely ignored other domestic animals, and also the deer and other wild animals which occasionally come up to the edge of the estate. But, says Mr. Blaschke, the representation of his remote relative excited unusual interest on the horse's part, and he approached cautiously to inspect it closer. When Mr. Blaschke pretended to pet the model the live horse snorted with jealousy. Finally he ran up close as though bent on destroying this alienator of his master's affections, but stopped suddenly and then ran away as if in fear. There seemed to be no doubt, Mr. Blaschke says, that the horse recognized Mesohippus as a member of his own family.

Flora of the Indiana Dunes: a handbook published by Field Museum, containing the only available complete list with descriptions of the 1,400 flowers found in the Dunes. Illustrated. Now on sale—price \$2.00.

THE RAYMOND FOUNDATION PROGRAMS FOR CHILDREN

The autumn series of free motion pictures for children given at Field Museum under the provisions of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, will begin Saturday, October 4. Programs will be presented twice each Saturday morning, at 10 and 11 o'clock, from that date until and including December 6. All the entertainments will be given in the James Simpson Theatre of the Museum.

Following is the complete schedule:

October 4—Friend Snail; Drifting Dunes; The Silver Swimmer; Undersea Life; Nesting of the Sea Turtle.

October 11—Columbus (film presented by the late Chauncey Keep); Lions on the Rocks.

October 18—The Story of Petroleum (lecture illustrated with motion pictures); Musquash the Muskrat.

October 25—Hungarian Farmers; Our Daily Bread; The Coon Hunt.

November 1—In Mexico; Enamelware; The Last of the Seminoles; A Four-footed Columbus.

November 8—Trees to Tribunes; Totem Tales; Sacred Bahoons.

November 15—How a Volcano Works; Active Volcano in Hawaii; Aloha Land; The Cobra and the Mongoose; Strange Animal Habits.

November 22—Beautiful Corsica; A Persian Wedding; Egypt, Old and New; The Taj Mahal.

November 29—The Puritans; Peter Stuyvesant (films presented by the late Chauncey Keep).

December 6—On the Trail of the Dik Dik; The Stork; Castles of Paper; Winter Pep.

Children from all parts of Chicago and suburbs are invited to attend these programs.

CHAMBER MUSIC FESTIVAL

Field Museum has made the James Simpson Theatre available to Mrs. Elizabeth Sprague Coolidge for the purpose of giving a Festival of Chamber Music, from October 12 to 16 inclusive. The Museum, however, does not participate in any way in the management of the concerts, which are entirely under the sponsorship of Mrs. Coolidge, who is well-known for her long continued and generous support of the cause of chamber music.

While part of the theatre is reserved for guests invited by Mrs. Coolidge, a number of seats will be available to others, and may be obtained by application to Miss Ruth Hughes, Room 650 Orchestra Hall, 220 South Michigan Avenue (telephone Harrison 0363).

The concerts on October 12, 14 and 16 will begin at 8:30 P.M.; those on October 13 and 15 at 3:30 P.M. All persons attending the evening concerts must use the West Door of the Museum for admission, and non-Members of the Museum must use that door also for the afternoon concerts. As the Museum's closing hour in October is 5 P.M. no part of the building other than the Theatre may be visited after the concerts.

Zoologist from India

Dr. Bains Prasad, Director of the Zoological Survey of India, Indian Museum, Calcutta, recently visited Field Museum and made notes on methods employed here in the preparation of exhibits.

HISTORY OF FIELD MUSEUM

By OLIVER C. FARRINGTON
Curator, Department of Geology

(Continued from last month)

Moving the contents of the Museum from the old Jackson Park building to the new edifice in Grant Park was a task of great magnitude. Not only were the exhibits and cases which had occupied approximately eight acres of floor space in the Jackson Park building of great bulk, but many were of a fragile and delicate nature, requiring great care in handling and transportation. Of the hundreds of glazed cases to be moved, many contained lights of very large dimensions. Some of the exhibits numbered thousands of specimens, the identity of each of which had to be preserved, while their arrangement had to be so systematized that they could be reinstalled in the same order. Protection from weather and dust was also essential.

Both railroad and motor truck transportation were employed for the transfer. A railway spur was built to the west door of the Jackson Park building and another spur connected the main line of the railroad to the building in Grant Park. The removal of objects and boxes by motor truck was begun early in March, 1920, and was continued until the beginning of September of that year. During this time, 354 loads of motor trucks of five-ton capacity were carried and deposited. Transfer by rail was begun on April 26 and was concluded by June 4, this part of the undertaking being confined to a period of thirty-four working days. The number of freight cars loaded and unloaded was 321. A total of 1,727 glazed and unglazed cases was moved. The number of boxes, crates, barrels and packages transported was 11,645, and of articles of office furniture, boxes of books and equipment for all departments, 8,006.

The success with which this difficult and strenuous undertaking was carried out may be judged from the fact that the damage suffered in transit by the entire amount of material totaled only \$1,250.

To some extent, during the period of moving and immediately upon its completion, installation of the exhibits in the new building was begun. This work was much facilitated by the fact that the positions in which cases and other exhibits were to be placed in the new building had been indicated on plans made before removal. Also all boxes containing exhibits were deposited in the halls in which they were to remain. Through the care thus taken in marking and assigning to their places in the new building all material transported, installation proceeded rapidly and successfully. The work was carried on through the winter of 1920-21 and such rapid progress was made that by the beginning of May the Museum was ready for reopening.

This notable event in the history of the Museum took place on May 2, 1921. It was signaled by a reception extended to about 8,000 invited guests. These included prominent citizens, educators, army and navy officers, and public officials. As the guests wandered through the beautiful halls of the new building, there was a generally expressed satisfaction that the dream which had been in the minds of a few public-spirited citizens approximately twenty-five years earlier had culminated in the establishment of a museum of world-wide scope and importance housed in a splendid and permanent building. It was recognized also that the new facilities afforded greater opportunities for public service and scientific progress. Moreover, the location in Grant Park made available funds which had been placed at the disposition of the South Park Board for museum

purposes by vote of citizens of the south side some years before. Felicitations were, however, tempered with sadness because Director Frederick J. V. Skiff, who had been a vital factor in the development of the Museum since its beginning, did not live to see the culmination of his efforts. He had passed away a little more than two months before the reopening of the Museum. The period was marked by other losses by death among the Museum staff and officials. Of the Board of Trustees, Dr. Frank W. Gunsaulus passed away early in the year, and of the Curators, C. B. Cory died during the summer.

D. C. Davies, who had been connected with the Museum since its earliest days as Assistant Secretary and Auditor, was appointed Director. Wilfred H. Osgood, who had been Assistant Curator of Zoology, was appointed Curator of Zoology. John E. Glynn was appointed Superintendent of Maintenance.

During the period of transfer, the Museum staff was naturally so fully occupied with this undertaking that few opportunities could be utilized for expeditions, explorations and research. However, in 1920, Dr. Osgood, accompanied by H. B. Conover, spent some months in northwest Venezuela, securing birds and mammals to supplement previous work in that region.

(To be continued next month)

THE BRONZE DISEASE

By H. W. NICHOLS
Associate Curator of Geology

Many of the ancient bronzes received at Field Museum and at other museums are infected with the bronze disease or malignant patina. If not cured this disease utterly destroys the bronze. Its cure has always been difficult, but it is now under control at Field Museum.

It appears first in mild cases as a rough patch of a whitish green color which, if neglected, may spread over the entire surface, constantly penetrating deeper, and in the end completely destroying the bronze. The disease is unique and has nothing in common with the bacterial decay of wood and fabric, nor is it related to the tin disease which sometimes destroys pewter. It is caused by the presence of corrosive compounds of copper and acid which have the property of renewing themselves after their activity has been expended in corroding the bronze. A minute speck of malignant patina can, theoretically at least, destroy the largest bronze.

There are a number of copper compounds which can act in this way, but the only one found active in Field Museum is the basic chloride of copper. Bronzes become infected with this chloride when they are long buried in soil which contains salt. This salt may come from organic waste or it may be desert or sea salt.

The disease is cured in Field Museum by an electric treatment originally devised for another purpose, and by a chemical treatment developed in the Museum Laboratory.

Museum Honors Three Scientists

At a recent meeting of the Board of Trustees of Field Museum three noted foreign scholars who have rendered important services to the Museum were elected Corresponding Members of the institution. They are Abbé Henri Breuil, professor in the Institut de Paleontologie Humaine, Paris; Professor Sir Arthur Keith of the Royal College of Surgeons, London; and Professor Grafton Elliot-Smith of University College, London.

OCTOBER GUIDE-LECTURE TOURS

Following is the schedule of conducted tours of the exhibits during October:

Week beginning September 29—Monday: 11 A.M., Melanesia, 3 P.M., African Animals; Tuesday: 11 A.M. and 3 P.M., General Tours; Wednesday: 11 A.M., Lacquer and Cloisonné, 3 P.M., Italian Archaeology; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Eskimos, 3 P.M., Migrating Birds.

Week beginning October 6—Monday: 11 A.M., Systematic Animals, 3 P.M., Chinese Exhibits; Tuesday: 11 A.M., Japan, 3 P.M., Animal Life in Asia; Wednesday: 11 A.M., Egyptian Life, 3 P.M., Animals That Hibernate; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Horses-Past and Present, 3 P.M., Musical Instruments.

Week beginning October 13—Monday: 11 A.M., Madagascar, 3 P.M., Giants of the Past; Tuesday: 11 A.M., Animal Habitat Groups, 3 P.M., Coffee, Chocolate and Tea; Wednesday: 11 A.M., Indians and Their Clothing, 3 P.M., Melanesian Art; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Early Man, 3 P.M., Native Trees.

Week beginning October 20—Monday: 11 A.M., Coal and Peat, 3 P.M., Fish and Reptiles; Tuesday: 11 A.M., Native Philippine Life, 3 P.M., Mines and Ores; Wednesday: 11 A.M., Animals of South America, 3 P.M., Chinese Art; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Users of Gold and Silver, 3 P.M., Sea Life, Past and Present.

Week beginning October 27—Monday: 11 A.M., Weapons and Armor, 3 P.M., Totem-pole Indians; Tuesday: 11 A.M., Palms, Cereals and Spices, 3 P.M., Primitive Industries; Wednesday: 11 A.M., Crystals and Gems, 3 P.M., Looma and Textiles; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Egypt and Kish, 3 P.M., Osteology Hall.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

NEW MEMBERS

The following persons were elected to membership in Field Museum between August 17 and September 16:

Corresponding Members

Abbé Henri Breuil, Professor Grafton Elliot-Smith, Professor Sir Arthur Keith.

Associate Members

Mrs. Edward W. Bailey, George W. Hand, Mrs. Carl Heinzen, A. L. Kuehn, Harry J. Kuhl, Mrs. August Lange, Mrs. Alice R. Langenbach, Mrs. D. B. Scully, Sr., Morris Karl Wilson, John David Yondorf, Milton S. Yondorf, Jr.

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Mrs. Albert J. Deniston, Jr., Carlisle Durfee, Mrs. Harry P. Frech, Mrs. David Mayer, Jr., Mrs. Albert G. McNeil, J. H. Millsaps, Mrs. Paul F. Morf, Mrs. Harry C. Patterson, Mrs. Harry F. Perkins, Mrs. Richard Pride, Miss Emily Rehm, Mrs. Charles W. Shippey, Miss Marguerite Stokes, Harry Striblen, Mrs. Harry Sutter, Donald H. Sweet, Miss Maude Thompson, Herbert B. Thomson, Mrs. George F. Tibbits, Frank H. Towner, Charles S. Traer, Robert J. Twyman, Mrs. Richard G. Waskow, Edwin F. Weary, Norton H. Weber, Kenneth Williams, Miss Prudence Wolf.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000 or more. Contributors give or devise \$5,000 to \$100,000. Life Members give \$500; Non-Resident (Life) and Associate Members pay \$100; Non-Resident Associate Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary, Patron, and Corresponding, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

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THE VERNAY-LANG EXPEDITION RETURNS FROM KALAHARI

Bringing collections remarkable for their size, variety and value, the Vernay-Lang Kalahari Expedition for Field Museum returned to this country in October. Its record of achievement places it among the most successful zoological expeditions ever sent to Africa.

The expedition, which was financed and led by Arthur S. Vernay of New York and London, with Herbert Lang, noted mammalogist, as co-leader, had been in Africa since the early part of the year. It brought back some 800 specimens of 90 species of mammals; 1,500 specimens of birds (330 species); 500 fish specimens; 1,000 lower invertebrates, and 25,000 insects. In addition, important collections of botanical specimens and ethnological material were obtained. Sharing with Field Museum in some of the results are the American Museum of Natural History, New York; the British Museum (Natural History), London; and the South African Museum, Pretoria, Union of South Africa.

Many of the specimens obtained represent exceedingly rare species, and when the collections have been fully checked over it is probable that numerous new species will be found. Much of the zoological material will be suitable for the preparation of groups. One item which Field Museum will receive consists of seven giraffes including a skeleton of a magnificent bull and an adult cow. Among other outstanding specimens are those of blesbok, black wildebeeste, brindled wildebeeste, red hartebeeste, gemsbok, springbok, steinbok, eland, sassaby, Ngamiland lechwe, impala, brown hyena, reedbuck, sable, Burchell's zebra, Duiker, roan, kudu, aardvark, leopard, lion, puku, serval, wild dog, and wart hog.

The personnel of the expedition, in addition to Messrs. Vernay and Lang, included some thirty men, among them Allan Chapman; Dr. A. W. Rogers, Director of the Union Geological Survey of South Africa; and scientists from the Pretoria Museum. Valuable assistance and cooperation were extended by Captain B. E. H. Clifford, Imperial Secretary at Pretoria, and various other resident officials.

The expedition in the course of its work crossed the Kalahari Desert, and hunted along the Botletle River in the British protectorate of Bechuanaland. Mr. Lang and some other members of the expedition re-

mained in Africa for further work after the departure of Mr. Vernay.

Wood Distillation Products

The Department of Botany has placed on exhibition in Hall 28, devoted to plant economics, a series of the products obtained by the destructive distillation of hard woods (such as beech, birch, maple) and of soft woods (such as pine), and also those obtained by the steam distillation of soft woods.

CAPTAIN WHITE, MAJOR COATS OBTAIN BONGO GROUP

Five specimens of the bongo, one of Africa's rarest antelopes, have been secured for Field Museum, according to cabled information received last month from Captain Harold A. White. The bongo is a giant beast of reddish brown color with numerous vertical white stripes on its body. The specimens obtained will be used in the preparation of a large habitat group in Akeley Memorial Hall.

Captain White, well-known sportsman of New York, is in central Africa with Major John Coats of Ayrshire, Scotland, on an expedition organized to hunt only certain extremely rare animals for the Museum. Messrs. White and Coats were co-leaders of a previous Field Museum expedition to Abyssinia.

The bongo group was the most important objective of the present expedition, and the success reported is extremely gratifying. For years the Museum has desired specimens of this animal, and many of the zoological expeditions it has dispatched to Africa have had the bongo on their lists of desiderata, but were unable to secure it. Captain White cabled that before the animals were shot he managed to make the first photographs, still and motion, ever made of the living bongo. One of the five specimens is a huge bull near to the record size, he reports.

Hunting the bongo is an extremely difficult task, according to Dr. Wilfred H. Osgood, Curator of Zoology. Hunters tracking it usually must crawl on hands and knees for long distances through the dense wet forest areas on the higher mountains in the central part of the continent. Mount Kenya and neighboring mountains as well as the great West African rain forest are included in the animal's habitat.

Full-grown bongos weigh from 400 to 600 pounds. Their coloring is beautiful and striking. The conspicuous white stripes on the bright tawny body are somewhat wider spaced than those of a zebra. The bongo has black feet, and spirally curved black horns with white tips.

The expedition is now continuing its hunt for other unusual animals, Captain White's cablegram stated.

There are eighty-four models of Chinese pagodas on exhibition in the South Gallery overlooking Stanley Field Hall. They were made by Chinese orphans in the Jesuit Institution of Siccawei.

THANKSGIVING BIRDS IN THE WILD



This habitat group of wild turkeys, in Hall 20 of the Museum, represents a scene once common in many parts of the United States, but now restricted to limited areas as the wild turkey is rapidly vanishing from our forests. Once these birds flourished in the Chicago area and throughout the eastern and southern parts of this country. Their disappearance points a lesson in conservation (see editorial on page 2). The group is a gift to the Museum from President Stanley Field.

UNLABELED FOSSILS

By H. W. NICHOLS
Associate Curator of Geology

The floor of Stanley Field Hall and the treads of the stairways to the second floor of Field Museum are tiled with marble from Carthage, Missouri. This marble was formed in a sea of Mississippian age, more than 300,000,000 years ago. Numerous fossils of the animals that lived in that sea appear on the face of the tiles. Most of them are shells, somewhat obscurely displayed as they have nearly the same color as the marble, but very distinct when once seen.

A less numerous group of fossils is more plainly seen, as their white color contrasts with the darker marble. These are thin rods with thin wide flanges wound spirally around them after the manner of screw-threads. They are the skeletons of colonies of minute animals (Bryozoa) which, for some unknown reason, always grew in this spiral form. These fossils have been named Archimedes after the Greek philosopher who first used such a screw form for raising water.

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

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B. E. DAHLGREN... Acting Curator of Botany
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WILFRED H. OSGOOD... Curator of Zoology
H. B. HARTE... Managing Editor

Field Museum is open every day of the year during the hours indicated below:

November, December, January 9 A.M. to 4:30 P.M.
February, March, April, October 9 A.M. to 5:00 P.M.
May, June, July, August, September 9 A.M. to 5:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

There is a cafeteria in the Museum where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members are requested to inform the Museum promptly of changes of address.

CONSERVATION

Field Museum's group of the wild turkey, shown on the first page of this issue of FIELD MUSEUM NEWS, not only suggests Thanksgiving but also brings to mind the relation of museums to the conservation of wild life.

However familiar we may be with the domestic turkey, most of us will never know the wild bird except as represented by specimens in museums. It is still far from being extinct but is now so scarce, so shy and so restricted to wild, little frequented regions that one's chances of seeing it alive are not very great.

The first and most obvious function of a natural history museum is to instruct and entertain by exhibiting natural objects and by presenting results of scientific research attractively and authoritatively to the public.

conservation, in which museum men often perform important services.

Museum botanists, geologists, and especially zoologists are frequently called upon for information about natural conditions which may be utilized by legislative bodies or conservation agencies.

In spite of the necessity of taking life in making its collections and conducting its expeditions, it is the spirit of a natural history museum to preserve rather than to destroy.

-W. H. O.

SPECIAL NOTICE

All Members of Field Museum who have changed their residences since October 1 are earnestly urged to notify the Museum at once of their new addresses, so that copies of FIELD MUSEUM NEWS and all other communications from the Museum may reach them promptly.

THE AUTUMN WOODS

BY PAUL C. STANDLEY
Associate Curator of the Herbarium

For late autumn Nature has reserved some of her choicest treasures among the plants. Among the glories of the autumn woods are the goldenrod, and the host of asters that spread their sheets of white, cold blue, and purple along the roadsides; and, most beautiful of all, the blue gentians that linger among the grasses even after frost.

After the pepperidge has shed its scarlet leaves, and the oaks their bronze, yellow and crimson, there blossoms one of the strangest of the shrubs—the witch hazel. How odd that it alone should burst into flower upon the arrival of winter, its every branch a blaze of gold.

When the first snows have fallen there remain many mementos of the summer flowers—the infinitely varied seed pods, persisting on the dried stalks; and the brightly colored berries that supply winter food for venturesome bird residents.

In the deep woods on a shaded bank or spread over a mossy log you may find the

variegated leaves of the trailing partridge-berry or twin-berry with its small "double" red fruit. Many woodland plants retain their leaves in winter, giving an air of life to the landscape.

Beside the roads there is an annoying abundance of burs and sticky pods of many sorts. The milkweeds are shedding their silk-tufted seeds from their opening pods.

If you venture out some cold fall morning, after a freeze, you may find the most curious of all the autumn plants—the frostweed. When its slender wiry stems have been frozen, there often effloresce through the bark lacelike frills of thin ice, which are ethereally delicate.

Important Plant Collection

Associate Curator Paul C. Standley recently determined several hundred specimens of plants of the Rubiaceae (Coffee Family) lent to Field Museum for study by the Botanical Garden of Leningrad.

Gifts to the Museum

Following is a list of some of the principal gifts received during the last month:

- From Sidney Weiss—alabaster model of Taj Mahal, India; from Mrs. Thomas E. Curtin—37 herbarium specimens, New Mexico; from William A. Schipp—191 herbarium specimens, British Honduras; from John T. Reid—2 specimens thimolite; from Universal-Atlas Cement Company—6 specimens illustrating the manufacture of portland cement; from Elmer S. Riggs—34 negatives of views in Yellowstone Park; from Miss Emily A. Clark—I lizard of the species Psilodactylus caudicinctus; from Charles Rydell—2 gaur ox skins, skulls and leg bones, Indo-China; from E. S. Frazer—4 lizards and 8 snakes, Irak; from Dillman S. Bullock—25 lizards and 9 frogs, Chile; from Mrs. Henry K. Coale—8 small mammal skins and 7 skulls, California.

BEQUESTS AND ENDOWMENTS

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 named by the giver.

FORM OF BEQUEST

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

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

THE RAYMOND FOUNDATION PROGRAMS FOR CHILDREN

The autumn series of free motion pictures for children, given at Field Museum under the provisions of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, will continue on Saturday mornings during November and the first Saturday in December. These entertainments are given in the James Simpson Theatre of the Museum, and each program is presented twice—at 10 A.M. and at 11 A.M. Following is the schedule:

November 1—In Mexico; Enamelware; The Last of the Seminoles; A Four-footed Columbus.

November 8—Trees to Tribunes; Totem Tales; Sacred Baboons.

November 15—How a Volcano Works; Active Volcano in Hawaii; Aloha Land; The Cobra and the Mongoose; Strange Animal Habits.

November 22—Beautiful Corsica; A Persian Wedding; Egypt, Old and New; The Taj Mahal.

November 29—The Puritans; Peter Stuyvesant (*films presented by the late Chauncey Keep*).

December 6—On the Trail of the Dik Dik; The Stork; Castles of Paper; Winter Pep.

Children from all parts of Chicago and suburbs are invited to attend these programs.

ARCHAEOLOGICAL EXPEDITION TO THE SOUTHWEST

BY PAUL S. MARTIN

Assistant Curator of North American Archaeology;
Leader of the Expedition

In order that Field Museum might make more noteworthy contributions to the history of the ancient Pueblo Indians, and that research on a neglected though interesting area might be carried on, the Field Museum Archaeological Expedition to the Southwest began excavations this summer on the Lowry ruin. This site is located in southwestern Colorado, which is a part of the richest archaeological area of North America.

The Lowry ruin is situated on a high plateau. It is a large mound, 200 feet long, 100 feet wide and 25 feet high. Underneath the trees, sagebrush, and rocks are walls of the houses of the last people who lived there. It is probable that their large communal house was built and occupied just prior to the "cliff-house" period, and that, when abandoned, the people moved south to Arizona, where they erected more buildings.

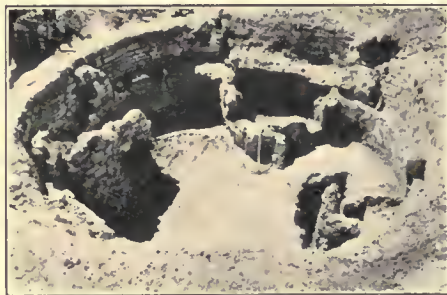
The site of the Lowry ruin was apparently a favorite one, for very often while digging exploratory trenches, evidences were found of as many as three or four occupations. A large spring near-by explains perhaps why this spot was so well liked.

Operations this year were largely preliminary, since so much surface dirt had to be removed. Work was retarded because the rooms were very deep. Often the dirt had to be thrown up and out fourteen or fifteen feet. After removal from the rooms the debris was taken with team and scraper to a chute which conducted it to a waiting dump-car.

The principal work accomplished was the cleaning out of eleven large rooms and one kiva. A kiva is a subterranean, circular room which was specially constructed for ceremonials and was the most important chamber of an ancient village. The kiva which we excavated this year was doubly interesting because on its walls were fragments of paintings of unusual design and

because it had been built on top of an older kiva. The lower kiva was not excavated this season. I should not be surprised to find yet a third kiva beneath the upper two.

The living rooms proper were likewise interesting. Each has peculiarities of its own, and often by carefully examining the walls for evidences of sealed doors, differences in masonry and old floor levels, one can trace something of their history. From one room in particular, I was able to demonstrate that, as the village grew, new doors were necessary, while old ones became useless and were sealed, and that new rooms were built on top of old ones. Another large room was filled solidly with more than 3,000 cubic



Kiva

Ancient ceremonial chamber on Lowry ruin in Colorado as it appeared after excavation by Field Museum Expedition.

feet of unadulterated ash, unmixed with charcoal or any other substance. Just how this room became so filled with ash is as yet a mystery. It is estimated that more than 7,000 tons of wood would have to be consumed to produce this amount of ash.

The expedition returned with 70 pots, many bone and stone tools and some prehistoric roof logs, from the rings of which, it is hoped, dates for these ruins may be computed. The pottery is unlike any in the Museum and is interesting because of the variety of designs done in black-on-white. All this material will be placed on exhibition in the Southwest Hall. The expedition was financed with income derived from a fund established by Julius Rosenwald and the late Augusta Rosenwald.

FOSSIL WORMS

BY BRYAN PATTERSON
Department of Geology

Worms, being soft-bodied creatures, are comparatively rare as fossils, and usually the only traces of them are their burrows and tracks. To find them in abundance, pressed flat between layers of a shaly rock and preserved as a thin sheet of carbonaceous matter is a rare thing. Yet this is the case at a very limited locality on the Sag Canal about a mile southwest of Blue Island, Illinois. Here, in a thin layer, about two feet thick, of a fine-grained, laminated and somewhat shaly rock, worm remains occur in large number.

In company with Messrs. Jack Appel, Scott Griffith and Edward Espenshade, I recently visited the locality and obtained specimens for Field Museum. In addition to the worms, which were, by far, the most common fossils at the locality, a few associated brachiopods and graptolites were encountered and also numerous rather undeterminable traces of algae.

The shaly layer in which the fossil worms occur is interstratified with the so-called Racine dolomite. It is of Silurian age. About 390,000,000 years are estimated to have elapsed since the worms were living.

SPECIAL SUNDAY LECTURES FOR MUSEUM MEMBERS

A special series of eight lectures on science and travel for Members of Field Museum will be given on certain Sunday afternoons during November, December and January. Three are scheduled for November, as follows:

November 16—Primitive Tribes of Angola, Portuguese West Africa

Wilfrid D. Hambly, Assistant Curator of African Ethnology, Field Museum; Leader, Frederick H. Rawson—Field Museum Ethnological Expedition to West Africa

November 23—Thirty Years among the Wild Beasts of India

A. Dunhar Brander, formerly Chief Conservator of Forests of the Central Provinces of India

November 30—With Pinchot in the South Seas

Howard Cleaves, Pinchot South Sea Expedition

Dates, titles and speakers for the other five lectures of this series will be announced in succeeding issues of FIELD MUSEUM NEWS. The lectures will be given in the James Simpson Theatre of the Museum, and will begin promptly at 3 P.M.

Each Member of the Museum is entitled to two seats for each lecture, to obtain which he should show his membership card to an attendant at the theatre on the afternoon of the lecture. Upon presentation of the card Members will be given two tickets of admission to the reserved section of the theatre. Seats in the reserved section which have not been claimed by 3 P.M. will be offered to the public.

FIVE MORE PUBLIC LECTURES IN AUTUMN COURSE

Five lectures in Field Museum's fifty-fourth free course remain to be given during November for the general public. The lectures will be illustrated with motion pictures and stereopticon slides. Noted scientists and travelers will be the speakers.

All these lectures are given in the James Simpson Theatre of the Museum on Saturday afternoons, at 3 P.M. Admission is free. Following is the schedule of dates, subjects and speakers:

November 1—On Horseback to the Glacial Age

Walter L. Payne, Department of Public Instruction, Washington, D. C.

November 8—Archaeological Explorations in the Maya Field and a Description of the Aztec and Maya Hieroglyphic Writings

Dr. Sylvanus G. Morley, Carnegie Institution of Washington

November 15—Will Insects Displace Man?

Brayton Eddy, Providence, R. I.

November 22—Siam and Indo-China

H. C. Ostrander, Yonkers, N. Y.

November 29—With Pinchot in the South Seas

Howard Cleaves, Pinchot South Sea Expedition

No tickets are necessary for admission to these lectures.

Maori Council House

On exhibition in Hall F is a complete Maori council house from New Zealand, the only one in America, and one of only six still in existence. The structure, sixty feet long and fourteen feet high, is decorated with numerous carvings and paintings in the best style of ancient Maori art.

All stages in the manufacture of bricks, from the digging of the clay to loading of the finished product on freight cars, are illustrated in a large model of a brickyard in the Department of Geology.

HISTORY OF FIELD MUSEUM

BY OLIVER C. FARRINGTON
Curator, Department of Geology
(Continued from last month)

Reinstallation of exhibits in the new building having nearly reached completion in 1922, an extensive series of expeditions was inaugurated with funds contributed chiefly by Marshall Field (grandson of the founder), Arthur B. Jones and President Stanley Field. It was deemed preferable for a time to confine explorations largely to one continent, and since many regions in South America had not received adequate representation in the Museum, that field was chosen. Some eight expeditions, representing four Departments of the Museum, carried on explorations there during 1922, several continuing into following years.

The paleontological expedition to Argentina remained in the field nearly three years, and then after returning to the Museum for reorganization, resumed its work, continuing until the latter part of 1927. The geological expedition to Brazil also carried on its work in two installments, the first year being devoted chiefly to exploration in the state of Minas Geraes and the second in the state of Bahia. One of the zoological expeditions remained in the field until 1923, its activities being chiefly carried on in Chile and Peru. Another continued work until 1924. Archaeological investigations in Colombia were conducted for nearly two years. Botanical explorations were mainly devoted to localities in Peru and British Guiana.

While South America was the chief field of explorations, not all the expeditions of this period were confined to it. An important expedition under the leadership of Assistant Curator Fay-Cooper Cole, gathered ethnological collections in Malaysia during 1922-23. In 1922, in cooperation with Oxford University, extensive excavations in the ancient city of Kish, Mesopotamia, were inaugurated. These have been continued up to the present time. Large and important ethnological collections were made in China by Curator Berthold Laufer during 1923.

An expedition to Central Africa under the leadership of Major Alfred M. Collins of Philadelphia and Edmund Heller of the Museum staff left for that field in 1923 and remained nearly three years. A large gorilla and a male okapi were among the important animals obtained. Hostile natives were encountered at one point by this expedition and three of the porters were murdered.

The Museum also cooperated in the work of the Third Asiatic Expedition of the American Museum of Natural History, from the labors of which valuable fossils, including dinosaur eggs, many mammal skins and other specimens from Mongolia were obtained. An expedition to Honduras in 1923, under the leadership of Assistant Curator Karl P. Schmidt, secured a valuable series of reptiles which included the individuals forming the group of American crocodiles now exhibited. Other collecting carried on during this period included that of fishes by Assistant Curator Alfred C. Weed in Louisiana and Texas, of plants in Florida by Acting Curator B. E. Dahlgren and of birds in Alaska by H. B. Conover, Associate in Ornithology.

In 1923 the staff suffered the loss by death of Dr. Charles F. Millspaugh, who had been Curator of Botany since the founding of the Museum. Dr. B. E. Dahlgren, who had been Associate Curator of the Department, was appointed Acting Curator of Botany.

To provide for conducting school children, members of clubs and societies, and other groups of visitors through the Museum halls, and supply them with information regarding

the exhibits, the institution's first guide-lecturer was appointed in 1922. The response to this service was so great that the staff of lecturers was soon increased to three, and with the addition of further duties now numbers five. The facilities afforded by the James Simpson Theatre also enabled weekly entertainments for children in the form of educational moving pictures to be offered in 1923. These have been continued until now with marked success, especially since the establishment of the James Nelson and Anna Louise Raymond Foundation (which will be chronicled in the next installment of this history).

In 1924 Albert W. Harris made a gift of \$100,000 to be added to the endowment of the Department of the N. W. Harris Public School Extension and this was of great aid to this branch of the Museum in its effort to keep pace with the increasing demands for its services of preparing and circulating traveling exhibits. The original endowment provided by the late Norman W. Harris, its founder, was \$250,000, and members of his family had contributed later an additional \$25,000.

Extensive additions made to the equipment and facilities of the Division of Printing in 1921 enabled, for the first time, all work of printing Museum publications, as well as labels, post cards and other impressions, to be done at the Museum. A complete equipment and staff for the production of photogravures were also provided, and a staff artist was engaged, thus furnishing means for making at the Museum the illustrations needed for publications, post cards, *et cetera*.

Several new classes of publications were initiated at this time in order that various subjects might be presented in the best form. These included leaflets designed for popular reading, memoirs for exhaustive treatment of subjects, and a technical and a design series.

Advantages of the new site and the greater facilities afforded by the new building were soon made evident by the increase of public attendance. Whereas the yearly attendance at the Jackson Park building never reached as high a figure as 300,000, the attendance at the new building, during the seven months following the opening, exceeded 500,000. For two years subsequently the figures were somewhat lower than this, but were exceeded in 1924, and since that time an almost uninterrupted increase in the yearly number of visitors has been enjoyed, exceeding 1,000,000 annually since 1927.

(To be continued next month)

Plants from Mount Duida

G. H. H. Tate of the American Museum of Natural History recently conducted a natural history survey of Mount Duida, a solitary peak in southern Venezuela. The large collection of plants made on the mountain is to be described in a volume edited by Dr. H. A. Gleason of the New York Botanical Garden.

At the request of Dr. Gleason, a report on the Rubiaceae or Coffee Family has been prepared by Paul C. Standley, Associate Curator of the Herbarium at Field Museum. This mountain peak, isolated by many hundreds of miles from any other mountain, has a very distinct flora as may be judged by the fact that of the twenty-eight Rubiaceae collected there, no less than twenty-two are new species, and two represent new genera. A nearly complete set of them has been deposited in the Herbarium of Field Museum.

GUIDE LECTURE-TOURS

Following is the schedule of conducted tours of the exhibits during November:

Week beginning November 3—Monday: 11 A.M., Chinese Exhibits, 3 P.M., Animals of Open Spaces; Tuesday: 11 A.M., Indian Homes, 3 P.M., Tree Climbers; Wednesday: 11 A.M., Cooking Utensils, 3 P.M., Skeletons; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Mummies, 3 P.M., Useful Plants.

Week beginning November 10—Monday: 11 A.M., Woodland Indians, 3 P.M., Reptiles; Tuesday: 11 A.M., Prehistoric Animals, 3 P.M., Hall of Plant Life; Wednesday: 11 A.M., Indian Ceremonies, 3 P.M., The Horse Family; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Gems and Jewelry, 3 P.M., Costumes.

Week beginning November 17—Monday: 11 A.M., African Animals, 3 P.M., African Hall; Tuesday: 11 A.M., Wood Carvings, 3 P.M., Fishes, Past and Present; Wednesday: 11 A.M., Roman Exhibits, 3 P.M., Asiatic Animals; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., South American Archaeology, 3 P.M., Marine Animals.

Week beginning November 24—Monday: 11 A.M., Northland Peoples, 3 P.M., Fur-bearers; Tuesday: 11 A.M., Deer and Antelope, 3 P.M., Oriental Drama; Wednesday: 11 A.M., Egypt, 3 P.M., Habitat Groups; Thursday: Thanksgiving Holiday—no tours; Friday: 11 A.M., Primitive Man, 3 P.M., Winter Birds.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

NEW MEMBERS

The following persons were elected to membership in Field Museum between September 17 and October 16:

Life Members

Louis E. Asher

Associate Members

Edward J. Birk, Mrs. Leopold Bloom, S. M. Brennasser, D. M. Compton, Henry A. Gardner, A. Kuntstader, Mrs. Vera Lauter, Mrs. Walther Mathesius, Dr. Ralph W. Parker, Charles S. Ross, Walter Bourne Smith, Mrs. B. C. Tighe, Louis Edward Tilden, Mrs. Gertrude D. Wood, Fay Woodmansee.

Annual Members

W. S. Agar, Sr., Paul W. Beda, Gottfried D. Bernstein, Charles R. Bixby, Carl A. Borland, Mrs. F. F. Bullen, Mrs. Russell E. Butler, O. W. Butts, Mrs. F. O. Clizbe, Walter Erley, Victor E. Garwood, Mrs. John H. Hamline, Mrs. William Hilliard, William T. Jane, Miss Helen M. Jewell, Dr. Aaron E. Kanter, Glen B. Kersey, A. G. Lange, W. H. Lazarus, Colonel A. F. Lorenzen, Mrs. William H. McSurely, Mrs. Arthur W. Moore, Dr. Ole C. Nelson, Mrs. H. H. Newman, Donald W. Newton, Mrs. Leslie H. Nichols, Mrs. Frank O. Nicholson, Charles D. Peacock, Miss Doris Petersen, Miss Sara A. Randick, Merritt M. Ranstead, James B. Redpath, Miss Marion J. Reynolds, W. F. Rieder, Mrs. Lester S. Ries, Miss Carol F. Roe, Mrs. H. L. Rogers, Thomas F. Sanford, Mrs. A. J. Sayers, Mrs. H. A. Schenkel, Mrs. John G. Shortall, Miss Anna B. Showalter, Dawson H. Skeen, Mrs. Harold M. Smith, Mrs. Axel S. Sorensen, Mrs. Frank E. Spencer, Elbert Gary Sutcliffe, Henry Curtis Swearingen, S. E. Thomason, Mrs. K. A. Townsend, Atee H. Tracy, Mrs. William H. Trow, Jr., K. L. Van Sickle, Miss Flora Waalkes, Miss Harriot Ward, Mrs. David A. Warner, Mrs. J. K. Watson, Mrs. Lewis Wessel, W. J. White, J. E. Whitwell, Mrs. Arthur C. Wilby, Dr. Russell M. Wilder, Howard L. Willett, Van Leer Willis, Miss Mary L. Windsor, Mrs. I. M. Zander, Mrs. LeRoy J. Zorn.

MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000 or more. Contributors give or devise \$5,000 to \$100,000. Life Members give \$500; Non-Resident (Life) and Associate Members pay \$100; Non-Resident Associate Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary, Patron, and Corresponding, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

Field Museum News

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No. 12

HABITAT GROUP OF NORTHERN SEA-LIONS IS INSTALLED IN NEW HALL

BY WILFRED H. OSGOOD
Curator, Department of Zoology

After several years of preparation, the first of the fine series of habitat groups of marine mammals projected for Hall N on the ground floor of the Museum has been completed and opened to the public. The great sea-lion of our northwest coast, selected to occupy the commanding central position in this hall, has proved to be a happy choice. The graceful lines of the animals, of which no less than thirteen are in the group, and their rich coloration, combine with the bright tones of an expansive seascape, providing one of the most attractive pictures yet produced in the Museum. This is enhanced by

Francisco, where it is associated with the California sea-lion, a smaller species frequently seen in captivity and trained to perform numerous "tricks." Farther north the large sea-lion is abundant, especially on the islands of Bering Sea, the Pribilofs and Bogoslof.

Like its relative, the fur seal, the sea-lion is polygamous, and the full-grown male is several times larger than the female, being known to reach a weight exceeding two thousand pounds. Ordinary seals, such as the harbor seal and many others, can only wriggle about on land since their hind flippers are coalesced so as to have limited powers of motion. In the sea-lions and other so-called

life in the water. In this process, it has not yielded all, so now it is an animal of both the sea and land, more aquatic than the otter, but more terrestrial than seals in general.

The Museum's group of the northern sea-lion has been prepared by Staff Taxidermist C. J. Albrecht, who collected the specimens for it on an expedition to the coast of Washington made expressly for the purpose several years ago. Mr. Albrecht's intimate knowledge of the habits of the animals combined with his technical skill has produced a very fine result. The background, by Charles A. Corwin, is one of the best of the many painted by this artist for Field Museum. The group is the largest animal group



This group of sea-lions, now to be seen in Hall N, is one of the largest and finest exhibits in the Museum

the setting for the group on the west side of Hall N to which there is a long, dignified approach by the stairs leading down west of the center of Stanley Field Hall.

The northern sea-lion or Steller's sea-lion inhabits the shores and islands of the north Pacific from Bering Sea to California and Japan. It lives in colonies mostly about wild, storm-washed islets and rocky promontories. Formerly, it was abundant throughout its range but it is now much reduced in the south. It still occurs in small numbers on the well-known "Seal Rocks" off San

eared seals both fore and hind flippers are very long and capable of such freedom of action that the animal is practically quadrupedal. Hence they clamber over the rocks with considerable ease and, under stress of circumstances, may even lope along at fair speed.

In its long course of evolution, this animal may have been, at times, more exclusively aquatic than now, but like other seals, like the sea otter and, for that matter, like whales and porpoises, it was doubtless once a land animal which gradually became adapted to

so far installed in the Museum. The case has a length of forty feet and depth of seventeen feet, giving ample space for a pleasing and natural composition showing thirteen specimens which are of varying ages and sizes.

The sea-lion group has been followed almost immediately by a group of Pacific walrus shown in an adjoining case. This group, collected and presented by Bruce Thorne and George Coe Graves II, will be illustrated in a subsequent number of FIELD MUSEUM NEWS.

Last Children's Program

The final program in the series of ten free motion picture entertainments for children, given at Field Museum this season under the provisions of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures, will be presented on Saturday morning, December 6.

Titles of the pictures to be shown are: *On the Trail of the Dik Dik*, *The Stork*, *Castles of Paper*, and *Winter Pep*. There will be two showings, one at 10 A.M. and one at 11, in the James Simpson Theatre.

Egyptian Busts

A case of reproductions of famous examples of ancient Egyptian sculpture, the originals of which are in museums in Cairo, Berlin, Turin and London, has been added to the exhibits in Field Museum's hall of Egyptian archaeology (Hall J). While the vast majority of the objects exhibited here are originals, these busts are also considered of importance and their value for study purposes has been much enhanced by painting them in the colors of the original stones, such as basalt, limestone, diorite, and granite.

Harris Extension Exhibit

Several traveling exhibition cases of the type circulated in the schools of Chicago by the N. W. Harris Public School Extension of Field Museum are being displayed in a special booth at the International Live Stock Exposition, held in the Union Stock Yards (November 29-December 6). It is expected that during the exposition several thousand people from out-of-town will visit the Museum. Large groups from the "4-H" clubs, of rural children as well as adults, will be conducted on Museum tours.

Field Museum of Natural History

Founded by Marshall Field, 1893

Roosevelt Road and Lake Michigan, Chicago

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FIELD MUSEUM NEWS

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WILFRED H. OSGOOD.....	Curator of Zoology
H. B. HARTE.....	Managing Editor

Field Museum is open every day of the year during the hours indicated below:

November, December, January	9 A.M. to 4:30 P.M.
February, March, April, October	9 A.M. to 5:00 P.M.
May, June, July, August, September	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Library of the Museum, containing some 92,000 volumes on natural history subjects, is open for reference daily except Sunday.

Traveling exhibits are circulated in the schools of Chicago by the Museum's Department of the N. W. Harris Public School Extension.

Lecturers for school classrooms and assemblies, and special entertainments and lecture tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of courses of free illustrated lectures on science and travel for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

There is a cafeteria in the Museum where luncheon is served for visitors. Other rooms are provided for those bringing their lunches.

Members are requested to inform the Museum promptly of changes of address.

A CHRISTMAS GIFT SUGGESTION

There is presented here an idea which may help to solve many a knotty Christmas gift problem now confronting Members of Field Museum.

Give your friends Field Museum Memberships as Christmas gifts.

As you make up your Christmas list you will undoubtedly think of many persons who would enjoy the privileges conferred by a Museum membership. A membership is a gift truly distinctive. It should prove especially pleasing to the intellectual man or woman. At the same time it will simplify matters for you, saving much of the time and effort usually required for Christmas shopping and preparation of packages. In presenting Museum memberships you require only a moment or two to write the names and addresses of your friends and a check for the membership fee. Once this is done the Museum relieves you of all further details in connection with your gift.

A folder describing this Christmas gift plan, and a handy application form for your convenience, are enclosed with this issue of

FIELD MUSEUM NEWS. Additional forms may be obtained by telephoned or written request to the Museum.

When you give a Museum membership you are giving something that will remind the recipient of you many times a year. Each month he will receive FIELD MUSEUM NEWS. Frequently there will be invitations to Museum lectures on science and travel by eminent explorers and researchers for which reserved seats will be provided without charge. Other privileges will be available the year around, such as free admission to the Museum for the Member, his family and house guests; the right to have out-of-town friends admitted to the Museum free of charge on presentation of the Member's personal card; the opportunity to obtain Museum publications of interest to the Member, without charge; and, when the Member travels, the extension of the courtesies of every museum of note in the United States and Canada upon presentation of his Field Museum membership card.

Surely you know many persons, both men and women, who would appreciate a membership as a gift. A wide choice is offered you in the cost of Memberships as gifts, beginning with the Annual Membership which costs only \$10.

The Museum will notify the friends you thus favor, by means of an attractive Christmas card, that, through your generosity, they have been elected Members of this institution. It will also inform them as to what their privileges are as Members. In order that the Museum may have ample time to deliver such notification cards to the recipient of your gift by Christmas Day, it is advised that applications be sent in before December 18.

MUSEUM EXPEDITION BOOKS NOW ON SALE

For the convenience of Members and the general public, Field Museum is now carrying in stock copies of two notable books telling the stories of recent Museum expeditions. One of these is *Jungle Islands—the "Illyria" in the South Seas*, and is a record of the Cornelius Crane Pacific Expedition of Field Museum. The other is *Trailing the Giant Panda*, and relates the adventures of the William V. Kelley-Roosevelts Expedition to Eastern Asia for Field Museum.

Jungle Islands is by Sidney Nichols Shurcliff, who was a member of the Crane Expedition. It is written in a popular and entertaining style. The book of 298 pages is well illustrated, containing more than ninety plates, including two maps and eight fine color plates by Walter A. Weber, the expedition's artist who is now a member of the Museum staff. There is a scientific appendix by Karl Patterson Schmidt, Assistant Curator of Reptiles at the Museum, who was scientific leader of the expedition. It is published by G. P. Putnam's Sons, and sells for \$10 a copy.

Theodore Roosevelt and Kermit Roosevelt, leaders of the Kelley-Roosevelts Expedition, collaborated in the authorship of *Trailing the Giant Panda*. This book is also written in popular style. It contains 278 pages, a color plate of the rare giant panda, a map, and some forty-six illustrations made from photographs taken by C. Suydam Cutting, who accompanied the Roosevelts. Charles Scribner's Sons are the publishers. Price, \$3.50 a copy.

The books may be purchased at the post card stands in Stanley Field Hall, or by mail order to the Museum.

IMPORTANT REINSTALLATIONS

A remarkable series of thirty large totem poles, grave posts and house posts, which have not been on exhibition since Field Museum moved into its present building,



Totem Pole

have now been placed on display as a result of the transfer of exhibits representing the Eskimos and the Indians of the north-west coast of America from Mary D. Sturges Hall (Hall 3) to the larger Hall 10.

The reinstalled exhibits have been enlarged and improved. A better geographical arrangement has been made, and large group cases are now shown to better advantage. Included in Hall 10 are life-size groups representing Eskimos hunting seals, preparing skins, fishing through the ice, and Kwakiutl Indians in several stages of the Hamatsa or cannibal dance. There is also a model of a Kwakiutl house. Other tribes represented by collections in this hall are the Tlingit, Tsimshian, and Haida.

The vacated Hall 3 has been set aside for the North American archaeological collections, which are now in process of installation and enlargement. These have been removed from the part of James Nelson and Anna Louise Raymond Hall (Hall 4) which they formerly occupied, and Hall 4 is now devoted entirely to exhibits pertaining to the eastern woodland Indians.

Turtle Colony Established

More than 600 painted box turtles of a species native to the southwest mysteriously appeared last month on a vacant lot at Seventeenth Street and Wabash Avenue. They were collected by the Humane Society and turned over to Field Museum for care. Karl P. Schmidt, Assistant Curator of Reptiles and Amphibians, after making certain comparative scientific observations, took the turtles to a dune region north of Waukegan, and there turned them loose. It is expected that they will colonize, and the results of the experiment are to be followed up by further observations. Twenty-five were preserved and retained in the Museum collections.

Gifts to the Museum

Following is a list of some of the principal gifts received during the last month:

From Burrige D. Butler—6 decorated woolen Navaho blankets; from Professor L. A. Kenoyer—190 herbarium specimens, Michigan; from G. L. Fisher—154 herbarium specimens, Texas and Mexico; from G. Klug—32 herbarium specimens, Peru; from Professor A. O. Garrett—116 herbarium specimens, Utah; from Dr. R. Salgues—21 insect galls and 2 gall insects; from E. B. Williamson—3 damsel flies; from Dr. Marcus Ward Lyon—1 tiger salamander; from Grace E. Johnston—1 weaver bird, Australia; from Mrs. Beulah L. Tuthill—1 fruit pigeon; from Illinois Humane Society—25 western box turtles; from Frank von Drasek—4 mineral specimens; from J. W. Johnston and H. S. Roach—24 specimens siliceous concretions; from William B. Pitts—2 specimens black oblite and 2 specimens petrified wood.

FUERTES' ABYSSINIAN PICTURES IN SPECIAL PUBLICATION

A portfolio of lithographic reproductions of paintings of Abyssinian birds and mammals by Louis Agassiz Fuertes has just been issued by Field Museum. These are in full color faithfully conforming to the originals made by the artist while a member of the Field Museum—*Chicago Daily News* Abyssinian Expedition of 1926-27. Their publication in this attractive form was made possible through a generous donation from C. Suydam Cutting, who was also a member of the Abyssinian expedition and a warm friend of Mr. Fuertes.

The original paintings included 108 subjects, all of which were purchased by Mr. Cutting after the artist's untimely death and presented to the Museum. From this collection, thirty-two of the finest have been selected and reproduced by offset lithography as loose plates enclosed in a portfolio of convenient form. They are suitable for individual framing or for preservation as a collection. Although intended as studies, most of them have much feeling and artistic quality, reflecting the artist's well-known ability to express the individuality or "personality" of birds.

An especially engrossed copy, bound in scarlet morocco, has been sent, as a coronation gift, to the newly crowned emperor of Abyssinia, Haile Selassie I. The emperor, formerly Ras Tafari and later Negus (king) Tafari Makonnen before his elevation to the imperial throne, had contributed much by his extremely helpful cooperation to the success both of the *Daily News*-Field Museum Expedition and the later Harold White-John Coats Expedition to Abyssinia for Field Museum. Fuertes himself attracted the admiration of the emperor, and one of his bird paintings now hangs in an honored place in the imperial palace.

By an ironical prank of fate, Louis Fuertes lost his life near his own home only a few weeks after his return from the long journey in Abyssinia where he had cheerfully accepted the dangers of travel in a remote region among wild and unruly people. This unfortunate end came at a time when he had mastered his technique and was in the fullness of a power and a desire to give rein to a freer expression of his talent than hitherto had been possible. On the Abyssinian trip, the idea of expanding his field, previously confined to North America, seemed to act as a stimulus and the paintings made, although produced under the restrictions of camp and trail, are among the finest bird portraits ever to come from his hand.

Only a limited edition of the portfolio has been published. While copies are available they may be obtained at the nominal price of \$3 each; a few copies in a de luxe edition, bound in fabrikoid, are available at \$5 each.

—W. H. O.

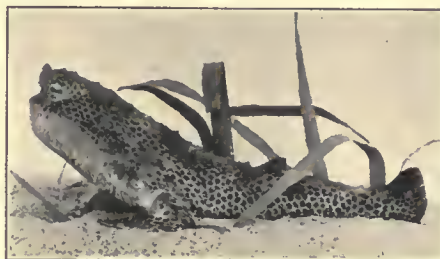
THE BATFISH

BY ALFRED C. WEED
Assistant Curator of Fishes

In the tropical and almost tropical seas around the Gulf of Mexico there are many miles of shore where beaches of coral sand dip under the warm waters. Where the ocean has a depth of only a foot or two, the "turtle grass" begins to grow, quite scattered along the edge, but making dense mats five or six inches tall a little farther out. Small fish and many other kinds of sea life hide in the "grass." Many other fish hide in or on the open sand while curious transparent shrimps swim above it. Among all these, one fish, the batfish, *walks* openly, unafraid.

This strange creature is so different that one is at a loss to know where to start in describing its peculiarities. Looking down from above it seems to have a body like a toad, but with a fishy tail. Body and tail are covered with warts and with a scanty growth of white whiskers.

If we look at it from the side, it seems to have four legs with finny feet. Even these are wrong. The pair close together under its throat are its hind feet, while its hands are far apart and well back. They look somewhat like the feet of a frog, but on much shorter legs. The batfish can swim with its tail, like any ordinary fish, but it usually



Batfish Exhibit—Hall 18

walks or rather hops along on the bottom. In its hopping it moves exactly in the same way as a rabbit feeding on a lawn. The weight is rested on the forward pair of feet and the rear ones are brought ahead. Then the weight is shifted to the rear pair and the forward ones moved along. In the water this fish can support its weight on either pair of fins or on either pair and the tail.

A good specimen of one of the species of batfish has been presented to Field Museum by the John G. Shedd Aquarium. An excellent celluloid model of this specimen has been prepared by A. G. Rueckert of the Museum staff and is now on exhibition in Albert W. Harris Hall (Hall 18).

MUSEUM LIBRARY BENEFITS FROM EXCHANGE SYSTEM

BY EMILY M. WILCOXSON
Librarian

At the close of the World's Columbian Exposition in 1893, when the first exhibits were brought together to establish Field Museum, there were also purchased several collections of books. To these were added collections received as gifts, and thus was formed the nucleus of the Library. Many other generous gifts, notably that of the Edward E. Ayer Library of Ornithology, have since expanded the usefulness of the Museum Library.

However, the growth of the Library has from the first depended very largely on the exchanges of its publications with other institutions, a service which was established from the beginning. The publications issued by the Museum have been sent out freely to universities, public libraries, scientific societies, academies and other institutions not only in this country but abroad, and from these institutions have been received in return such publications as they had to offer.

As the number of the Museum's publications has increased the number of works sent to it has also increased, until in the last year there were sent out some 15,381 copies of Museum books, in exchange for which Field Museum Library has received books and pamphlets from some 700 institutions located in all parts of the world.

SPECIAL SUNDAY LECTURES FOR MUSEUM MEMBERS

Two special illustrated lectures for Members of Field Museum will be given on Sunday afternoons in December.

On December 7 Llewelyn Williams, member of the staff of the Department of Botany, who recently returned from South America where he led the Marshall Field Botanical Expedition to Peru, will lecture on *Amazonian Jungles and Andean Trails*.

On December 14 the lecture will be on the subject, *Excavation in a Prehistoric Village in Colorado*. Dr. Paul S. Martin, Assistant Curator of North American Archaeology and leader of the recently returned Field Museum Archaeological Expedition to the Southwest, will be the speaker. Both motion pictures and stereopticon slides will be used.

These are the fourth and fifth lectures in the current series of eight presented for Members. The final three, to be given in January, will be announced in the next issue of FIELD MUSEUM NEWS. The lectures are given in the James Simpson Theatre of the Museum, and begin promptly at 3 p.m.

Each Member of the Museum is entitled to two seats for each lecture, to obtain which he should show his membership card to an attendant at the theatre on the afternoon of the lecture. Upon presentation of the card Members will be given two tickets of admission to the reserved section of the theatre. Seats in the reserved section not claimed by 3 P.M. will be offered to the public.

MICRO-FOSSILS

BY SHARAT K. ROY
Assistant Curator of Invertebrate Paleontology

Fossils which are large and can easily be observed by the naked eye are called macro-fossils. Those so small they can be seen only with a microscope are micro-fossils.

The value of a fossil, however, has nothing to do with its size. A fossil one-tenth of a millimeter, tinier than a particle of dust, may have greater economic and correlative significance than one ten or more feet long. Of late, especially in oil geology, vast sums of money are being saved by the use of micro-fossils as guides in subsurface correlation. These serve as guides or horizon markers because they are limited in their vertical range. The study of the guide fossils has a far-reaching significance. It not only enables a paleontologist to state the age and character of reservoir beds and source rocks of petroleum supply, but also offers him ample data for predicting accurately what character of material he may expect to penetrate at a given depth.

Thus there is a direct relation between a fossil and the cost of gasoline or the success or failure of mining ventures.

The fossil collection made by the Second Rawson-MacMillan Subarctic Expedition of Field Museum in Baffinland, has yielded a great number of micro-fossils. They are mostly Ostracoda, Gastropoda and Bryozoa. These, when identified, will help solve some of the problems of the stratigraphy of the Arctic regions. Lack of knowledge of the stratigraphy of the Arctic lands has hindered full realization of the geologic succession in the United States.

It may be asked how these fossils are collected if they cannot be seen without a microscope? The truth is that the collector does not know that he is collecting them. They are embedded in the matrix of larger fossils and appear as surprise visitors in the laboratory.

HISTORY OF FIELD MUSEUM

BY OLIVER C. FARRINGTON
Curator, Department of Geology
(Continued from last month)

From 1924 to 1930 many expeditions were conducted in territories ranging from equatorial to arctic zones. Two expeditions were led by Colonel Theodore Roosevelt and his brother Kermit Roosevelt. In 1925 and again in 1928 they explored extensive areas in southern Asia, collecting zoological material. The first expedition was financed by Trustee James Simpson; the second by Trustee William V. Kelley. A principal object of the first was to secure specimens for groups of Marco Polo sheep and Thian Shan ibex. These were obtained in the Thian Shan Mountains of Turkestan and on the Pamir plateau. Some of the central and upper provinces of India yielded representative specimens of more than thirty large mammals, including Indian rhinoceros, tiger, leopard, several species of deer, *et cetera*. George K. Cherrie and C. Suydam Cutting were other members of the expedition.

On the second expedition of the Roosevelts certain rare animals were collected in southern China, and little known parts of French Indo-China were intensively worked. One division was led by the Roosevelts, a second by Harold J. Coolidge, Jr., of Boston, and a third by Herbert Stevens of Tring, England. Other members of the expedition were C. Suydam Cutting, Dr. Josselyn Van Tyne, Russell W. Hendee, and Dr. Ralph E. Wheeler. The most noteworthy result was securing specimens of the extremely rare mammal known as the giant panda. A varied collection of the entire vertebrate fauna of these little known parts of the world was also obtained.

Two consecutive expeditions to the sub-Arctic, made possible by the generosity of Trustee Frederick H. Rawson, and led by Commander Donald B. MacMillan, obtained important results. The first, in the summer of 1926, visited Labrador, Greenland and Baffinland, and brought back much zoological and geological material. The following summer a return was made to these regions, special attention being given to an ethnological study of the Naskapi Indians, to the geology of Baffinland, and to fish, mammal and bird collecting. The scientific personnel of both expeditions was made up chiefly from members of the Museum staff, including Alfred C. Weed, Ashley Hine, Sharat K. Roy, Dr. W. D. Strong, and Arthur G. Rueckert.

Another expedition to the Arctic was made possible in 1927 through the generosity of Trustee John Borden who donated the services of his yacht *Northern Light*. Mr. Borden himself led the party which explored the coast of northwestern Alaska and penetrated the polar sea as far as Wrangell Island. Specimens were obtained of Alaska brown bears, which are the largest carnivores now living, polar bears, many species of birds, and rare objects representative of Eskimo culture. Ashley Hine, a Museum taxidermist, accompanied the expedition. Further zoological specimens were obtained in this part of the world by an expedition financed by Alexander H. Revell.

More recently, Bruce Thorne of Chicago and George Coe Graves II of New York made an expedition to Alaska and the Siberian coast, securing specimens of Pacific walrus and Alaskan caribou, which they presented to the Museum, together with funds toward the construction of an exhibit. John Jonas accompanied the expedition.

Two expeditions to Abyssinia were conducted in this period. The first, starting in 1926, remained nearly a year, securing a

very extensive collection of typical animals of that country. Large mammals obtained included nyala, koodoo and other antelopes, zebras, oryx, baboons, *et cetera*. This expedition was financed by the *Chicago Daily News* and led by Dr. Wilfred H. Osgood, Curator of Zoology. Other members were Alfred M. Bailey, Louis A. Fuertes, C. Suydam Cutting and Jack Baum. The second expedition was financed and led by Captain Harold A. White of New York and Major John Coats of Ayrshire, Scotland. Taxidermist C. J. Albrecht of the Museum staff accompanied the party. This expedition left in 1928 and hunted nearly a year in southern Abyssinia and near-by regions. Specimens were secured for a group of lions, a group of aard-varks, and a water hole group which, as projected, will be the largest habitat group in the Museum.

A zoological expedition to Central Africa in 1927 which yielded important results was financed and led by Boardman Conover, Associate in Ornithology at the Museum, and R. H. Everard of Detroit. Assistant Curator John T. Zimmer accompanied them. The expedition hunted more than a year, chiefly in the Tanganyika region, and obtained many specimens of mammals, birds and reptiles, including one of that extremely rare and odd animal, the so-called white rhinoceros.

An expedition to Brazil in 1926 was sponsored by Marshall Field, and led by George K. Cherrie. Mrs. Evelyn Marshall Field took an active part. A fine jaguar, shot by Mrs. Field, as well as specimens of two rare species of deer and two giant anteaters were among the important animals obtained. A number of members of the botanical, geological and zoological staffs of the Museum accompanied this expedition. In Rio de Janeiro the famous botanical garden and adjoining tropical forests were of assistance to Dr. B. E. Dahlgren, Acting Curator of Botany, for the collection and the study of a great variety of tropical plants. H. W. Nichols, Associate Curator of Geology, journeyed to the most important mining districts of Brazil, Uruguay, Chile and Bolivia, and obtained comprehensive collections of their characteristic ores and minerals, and some archaeological material. Karl P. Schmidt, Assistant Curator of Reptiles, made an important collection of snakes and crocodiles. Colin C. Sanborn, Assistant in Mammalogy, remained until late in the following year, carrying on several special lines of collecting in Uruguay, Patagonia, and Brazil. Curzon Taylor was official photographer.

Other explorations in South America for which funds were furnished by Marshall Field included two successive expeditions to Peru in 1925 and 1926, by Dr. A. L. Kroeber, the Museum's Research Associate in American Archaeology, for the study of the ancient cultures of that country by excavations and collections, and an expedition in 1929 in charge of Dr. B. E. Dahlgren, Acting Curator of Botany, to the Amazon to make collections of its woods, rare plants and economic products. Llewelyn Williams, Assistant in Wood Technology, and Emil Sella were members of this expedition. Mr. Williams devoted more than a year to explorations about the headwaters of the Amazon. This region, hitherto little known botanically, yielded a large amount of material, among which it is expected many new species of plants and trees will be found.

(To be continued next month)

The Department of Botany has on exhibition a case containing various rare and beautiful tropical woods.

GUIDE LECTURE-TOURS

Following is the schedule of conducted tours of the exhibits during December:

Week beginning December 1—Monday: 11 A.M., Mexico, 3 P.M., Dinosaurs; Tuesday: 11 A.M., Economic Plants of the Americas, 3 P.M., Egyptian Art; Wednesday: 11 A.M., Eskimos, 3 P.M., Mammals, Past and Present; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Story of Early Man, 3 P.M., Unusual Fishes.

Week beginning December 8—Monday: 11 A.M., Japan and Korea, 3 P.M., Birds of Prey; Tuesday: 11 A.M., Animals of the Great Lakes Region, 3 P.M., The Japanese and Their Neighbors; Wednesday: 11 A.M., Clothing of Primitive People, 3 P.M., Weapons and Armor; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Marine Life, 3 P.M., Gems and Jewelry.

Week beginning December 15—Monday: 11 A.M., Valuable Fur-bearing Animals, 3 P.M., Trees of Many Kinds; Tuesday: 11 A.M., The Plant Family, 3 P.M., India and Tibet; Wednesday: 11 A.M., Northwest Coast Indians, 3 P.M., Uses of Bark, Sap and Resin; Thursday: 11 A.M. and 3 P.M., General Tours; Friday: 11 A.M., Roman Industries, 3 P.M., Musical Instruments.

Week beginning December 22—Monday: 11 A.M., Mines and Ores, 3 P.M., Madagascar; Tuesday: 11 A.M., Illinois Industries, 3 P.M., Reptiles and Amphibians; Wednesday: 11 A.M., Farmer Indians, 3 P.M., Basket Makers; Thursday: Christmas holiday—no tours; Friday: 11 A.M., Egyptian Hall, 3 P.M., African Animal Life.

Week beginning December 29—Monday: 11 A.M., Work of Wind and Water, 3 P.M., Systematic Mammals; Tuesday: 11 A.M., Gems and Crystals, 3 P.M., Drama in the Orient; Wednesday: 11 A.M., Chinese Art, 3 P.M., Stone Implements and Weapons.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

NEW MEMBERS

The following persons were elected to membership in Field Museum during the period from October 17 to November 15:

Associate Members

Otto C. Andreen, Mrs. E. C. Andrews, William W. Baldwin, W. W. S. Carpenter, Mrs. W. F. Dickinson, Mrs. Ollie L. Herron, William Joseph Lynch, Abraham R. Marriott, John J. Mitchell, Norman S. Parker, Herbert Morrow Phillips, Mrs. Ralph H. Poole, John H. Wood.

Sustaining Members

Mrs. Virginia Hubbell Thorne.

Annual Members

Edwin D. Allen, Alfred B. Black, Miss Beata M. Carlson, Harry L. Cavanagh, Miss Louisa Cottell, Miss Samuella Crosby, Miss Eva B. Crowe, Dr. Bowman Corning Crowell, Mrs. E. R. Danel, Mrs. Joseph H. Defrees, Mrs. Arthur G. Fink, Mrs. Earl V. Flaherty, Mrs. R. L. Fordyce, Mrs. C. S. Funk, Mrs. Chester F. Hamilton, Mrs. Arthur E. Holt, W. L. Lafean, Miss Eva Lewis, Mrs. James J. McKenna, J. C. Mechem, Mrs. Herman Michael, Charles T. Milner, Oscar L. Moore, Mrs. John A. Nicholson, William B. Pavey, Mrs. George P. Perkins, Mrs. Charles F. Pietsch, Alwin Frederick Pitzner, Gerald A. Rolfs, Mrs. F. H. Shanahan, Miss Beatrice M. Shonts, Mrs. Jacob L. Siegenthaler, Miss Elizabeth Singleton, Mrs. Mary A. Sisk, Mrs. Frederic B. Skillman, Miss Barbara H. Sleight, Mrs. Donald D. Sperry, Rudolph Staar, Ernest T. Stille, George Sype, Isaac D. Waxman, Mrs. Carl H. Weil, Mrs. John M. Young.

BEQUESTS AND ENDOWMENTS

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 named by the giver. For those desiring to make bequests, 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,

Cash contributions made within the taxable year to Field Museum not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.