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FIELD MUSEUM
OF
NATURAL HISTORY

GENERAL GUIDE



1938-54

CHICAGO, U. S. A.



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OTHER PUBLICATIONS OF FIELD MUSEUM

In addition to this General Guide to the collections, Field Museum of Natural History has a series of special guides covering in detail certain sections of the exhibits. These special guides are more than mere direction books—they include much interesting, instructive and entertaining material on the subjects with which they deal. A price list of these appears on page 56.

A Handbook of Field Museum of Natural History, containing a comprehensive survey of the activities of the institution, with data on its history, organization, expeditions, endowments, etc., is available at 25 cents.

The Museum also publishes four series of Leaflets on scientific subjects, written in popular style. Thirty-three such leaflets have been published in the Anthropological Series; twenty-two in the Botanical Series; fourteen in the Geological Series; and fifteen on zoological subjects.

A Design Series is available, which is of particular value to those interested in design work, arts, and handicrafts.

A list of the Leaflets and the Design Series, with prices, begins on page 51 of this Guide.

Scientific Publications of the Museum, of a more technical nature and primarily intended for distribution among other museums, libraries, and institutions of learning, are also obtainable by individuals. Lists and prices may be had on application.

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FIELD MUSEUM OF NATURAL HISTORY
Roosevelt Road and Field Drive, Chicago

FIELD MUSEUM OF NATURAL HISTORY

FOUNDED BY MARSHALL FIELD, 1893

GENERAL GUIDE

NINETEENTH EDITION



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CHICAGO, U.S.A.

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

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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 for federal income tax purposes.

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

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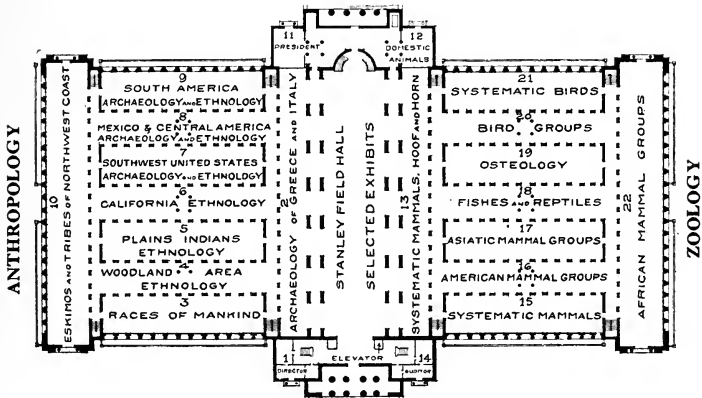
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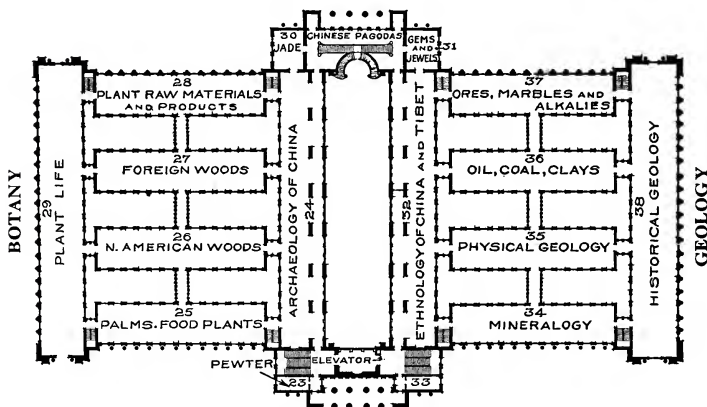


Key to Floor Plan

HALL
NUMBER

- Selected exhibits from each Department—Stanley Field Hall
- 2—Archaeology of Etruria, Italy, and Greece—Edward E. and Emma B. Ayer Hall and alcoves
 - 3—Races of Mankind—Chauncey Keep Memorial Hall
 - 4—Ethnology of Indian Tribes of the Woodland and Southeastern Areas—James Nelson and Anna Louise Raymond Hall
 - 5—Ethnology of the Indian Tribes of the Great Plains—Mary D. Sturges Hall
 - 6—Ethnology of the Indian Tribes of California and Nomadic Tribes of Arizona and New Mexico
 - 7—Archaeology and Ethnology of Southwestern United States
 - 8—Archaeology and Ethnology of Mexico and Central America
 - 9—Archaeology and Ethnology of South America
 - 10—Ethnology of Eskimo and Indian Tribes of the Northwest Coast of America
 - 12—Sculptures of Champion Domestic Animals of Great Britain
 - 13—Horned and Hoofed Mammals—George M. Pullman Hall
 - 15—Mammals—Systematic
 - 16—American Mammals—Habitat Groups—Richard T. Crane, Jr., Hall
 - 17—Asiatic Mammals—Habitat Groups—William V. Kelley Hall
 - 18—Marine Invertebrates, Fishes, Reptiles, and Amphibians—Albert W. Harris Hall
 - 19—Osteology—Skeletons
 - 20—Birds—Habitat Groups
 - 21—Birds—Systematic
 - 22—African Mammals—Carl E. Akeley Memorial Hall

PLAN OF SECOND FLOOR

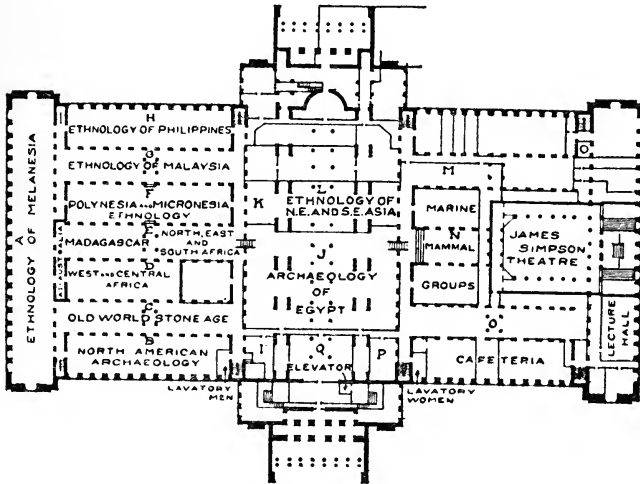


Key to Floor Plan

HALL
NUMBER

- 23—Pewter—Edward E. Ayer Collection
 24—Archaeology of China—George T. and Frances Gaylord Smith Hall
 25—Palms—Food Plants
 26—North American Woods—Charles F. Millspaugh Hall
 27—Foreign Woods
 28—Plant Raw Materials and Products
 29—Plant Life
 30—Chinese Jade
 31—Gems and Jewels—H. N. Higinbotham Hall
 32—Ethnology of China and Tibet; Chinese and Tibetan Theatrical Masks and Costumes
 34—Systematic Minerals, Crystals, and Meteorites
 35—Relief Maps, Systematic Rocks, and Physical Geology—Clarence Buckingham Hall
 36—Petroleum, Coal, Clays, and Sands
 37—Ores of Precious and Base Metals, Marbles, and Alkalies—Frederick J. V. Skiff Hall
 38—Historical Geology—Ernest R. Graham Hall

PLAN OF GROUND FLOOR



Key to Floor Plan

HALL
NUMBER

- A—Melanesia, South Pacific—Joseph N. Field Hall
- A1—Ethnology of Australia
- B—North American Archaeology
- C—Stone Age of the Old World
- D—Ethnology of West and Central Africa
- E—Ethnology of North, East, and South Africa, and Madagascar
- F—Ethnology of Polynesia and Micronesia
- G—Ethnology of Malaysia
- H—Ethnology of Philippine Islands
- J—Archaeology of Egypt
- L—Ethnology of Korea, Siberia, India, Burma, Siam, Ceylon, Andaman and Nicobar Islands, and the Ainu
- N—Marine Mammal Habitat Groups

The James Simpson Theatre, the Lecture Hall, the Cafeteria and unch rooms, and the lavatories are located on this floor.



STANLEY FIELD HALL

The central exhibition hall of Field Museum, dedicated to the institution's President, Mr. Stanley Field

BRIEF GENERAL GUIDE TO THE COLLECTIONS

Preface

Field Museum of Natural History was established in 1893. The founding of an institution of this importance and character was made possible by the late Marshall Field, who, in addition to his original gift of \$1,000,000, made other gifts of approximately \$430,000 during his life, and bequeathed on his death in January, 1906, a further sum of \$8,000,000, of which \$4,000,000 was allotted toward the erection of the present building, located in Grant Park, and \$4,000,000 toward endowment.

The Museum is incorporated under state law, and its active control rests in the Board of Trustees, with President, Secretary and Treasurer. The executive of the Museum is the Director, under whom there are five Chief Curators of Departments, and many divisional Curators, Associate Curators, Assistant Curators, Research Associates, preparators, taxidermists, artists, librarians, division chiefs, etc., and their assistants.

The Museum building is 706 feet long, 438 feet wide, 104 feet high, and, with the terrace and grounds surrounding it, occupies an area of about eleven acres. The central hall, Stanley Field Hall, is 299 feet long, 68 feet wide, and 75 feet high. The rest of the building is divided into four floors. Of these, the main and second, and a portion of the ground floor, are devoted to exhibition purposes, the total exhibition space comprising approximately 550,000 square feet. The remaining space serves as working quarters for the administrative and scientific staffs and the maintenance force. The exterior, which is of white Georgia marble, is treated in monumental manner based on Greek architecture of the Ionic order. The principal fronts are divided into a large pedimented central pavilion, with two long wings terminated by a smaller pavilion at each end. A notable feature is the terrace, which is sixty feet wide, and completely surrounds the building at a height of six feet above the surrounding level.

In this structure, the architects, D. H. Burnham and Company and Graham, Anderson, Probst and White, have given to Chicago and the nation a masterpiece of monumental building possessing distinction and dignity appropriate to its purpose and origin.

The main hall, which is dedicated to Stanley Field, President of the institution, contains four statues, designed by Henry Hering, which symbolize the aims and purposes of the Museum. The figures flanking the north archway represent Natural Science and the Dissemination of Knowledge, while those at the south archway typify Research and Record.

Certain halls in the Museum are named in honor of some of the persons who have made notable contributions or rendered valuable service to the institution.

STANLEY FIELD HALL

Occupying the Nave of the Building

The exhibits in Stanley Field Hall, into which the main entrance opens, are selected from each Department of the Museum. They are intended to illustrate the activities of the Museum as a whole and to serve as an introduction to the systematic collections assembled in the exhibition halls. Some of the exhibits in this hall are changed from time to time to show new acquisitions or the results of recent expeditions. The exhibits shown at the date of publication of this Guide, as listed below, are typical of the contents of the hall.

In the center of the hall are two African elephants mounted in fighting attitude.

Toward the south end of the hall three bronze groups, the work of the late Carl E. Akeley, illustrate lion spearing by native Africans.

Case 1. Prehistoric American gold ornaments from Colombia and Ecuador, South America.

Case 2. Ancient Roman bronze bathtub, from Boscoreale, Italy.

Case 3. Prehistoric races of man, illustrated by restorations of the Pithecanthropus erectus, the Neanderthal man of La Chapelle-aux-Saints, and the Cro-Magnon man.

Case 4. Embroideries, chiefly women's dresses, from western India.

Case 5. Marine fauna. Various types of beautiful and characteristic marine animals, such as sponges, precious corals, sea-urchins, and shells.

Case 6. Su-Lin, famous giant panda, formerly of the Chicago Zoological Society's park at Brookfield, mounted as she appeared in life, is on temporary exhibition in Stanley Field Hall. In the near future this exhibit will be transferred to the systematic collection of mammals in Hall 15, where it will be shown in a case containing the principal related animals.

Case 7. Selected examples of Chinese art, represented by ancient ceramics, bronze, the figure of a zebu in cast solid silver, four clay figures of women engaged in a polo match, and a gilt bronze figurine of a recumbent rhinoceros.

Case 8. Gold and silver jewelry, India.

Case 9. Resins. This case, together with two others in Hall 28, Department of Botany, contains one of the finest collections of resins known.

Case 10. An iron meteorite, weighing 3,275 pounds. It is remarkable for its large size and symmetrical form. It was found in 1908 near Tonopah, Nevada.

Case 11. Antiquities of the early Sumerian period (about 3500 B.C.) excavated from the ancient city of Kish, Mesopotamia. A copper rushlight, copper implements and vessels, bowls of alabaster and other stones, necklaces, and shell beads.

Case 12. A scepter of good luck carved from sandalwood; two lacquered cabinet doors painted with scenes in gold lacquer; and a cut velvet table cover, China.

Case 13. Varieties of quartz. The remarkable range of color and form of this mineral is illustrated.

Case 14. A group of epiphytic and parasitic plants growing about a termite nest built at the tip of a branch from a tree in the tropics. From Demerara River, British Guiana. The group was reproduced from nature in the Plant Reproduction Laboratories of the Museum.

Case 15. Passenger pigeons in a characteristic and natural setting. These birds, once common, are now extinct.

Case 16. Textiles of India (scarfs for women).

Case 17. Recent and ancient allied plants and animals. They are shown in both modern and fossil forms. Types known as "immortal," "persistent," "dwindled," etc., are illustrated.

Case 18. A single crystal of beryl weighing a thousand pounds.

Case 19. Bower bird. Male and female of this peculiar bird from New Guinea, with the characteristically decorated "bower" or nuptial playground built by the male.

Case 20. Ancient Peruvian textiles.

Case 21. Wood and foliage of the three principal species of mahogany.

Case 22. The history of the horse family, showing the evolution of the horse from a four-toed to a one-toed animal.

Cases 23 and 24. In these cases in the south corners of the hall are displayed feather masks from New Guinea on life-size figures.

Examples of exhibition cases used by the N. W. Harris Public School Extension of Field Museum of Natural History are displayed at the south end of the hall.

A bronze standard bearing the names of twenty-four persons, each of whom has given \$100,000 or more to the Museum, is placed at the north end of the hall.

Publications of the Museum, and other books for both adults and children, as well as photographs, post cards and ornamental objects are on sale at The Book Shop near the north or main entrance.

DEPARTMENT OF ANTHROPOLOGY

First Floor:—Halls 2-10

Second Floor:—Halls 23, 24, 30, 31, and 32

Ground Floor:—Halls A-H, J, and L

First Floor

Hall 2: Edward E. and Emma B. Ayer Hall. Archaeology of Etruria, Italy, and Greece.—The main section of this hall is occupied by exhibits of Etruscan, Greek, and Roman antiquities in stone, bronze, iron, pottery, and glass. Three Etruscan painted sarcophagi from about 500 B.C., and a number of fresco paintings from Boscoreale, a village north of Pompeii, of the first century A.D. are especially noteworthy.

Hall 3: Chauncey Keep Memorial Hall. Races of Mankind.—The exhibits in this hall illustrate the principal types found among the various races of mankind, emphasizing the essential

physical characteristics of each. The main racial types are represented in an extensive series of life-size bronze and stone statues, busts and heads by Malvina Hoffman, distinguished sculptor.

The center of the hall is occupied by a group of three bronze statues, in heroic size, of a white, a yellow, and a black man, symbolizing the unity of the races of mankind as a single, well-defined species. The figures representing racial variations which occur within the three basic divisions are arranged around this central triad, those of peoples from each continent being grouped together.

Types of the peoples of Africa, Europe, Asia, America and Oceania are represented in bronze and stone. At the east end of the hall are large colored transparencies further representing some of the types of races shown by the sculptures; an analytic exhibit of skulls, skeletons, models of brains, color charts of skin and eyes, and casts of hands and feet; and other exhibits pertaining to physical anthropology.

Hall 4: James Nelson and Anna Louise Raymond Hall. Tribes of the Woodland and Southeastern Areas.—In the southwest corner of this hall is a case of representative material from present-day tribes of the southeastern United States. The remainder of the southwest quarter is devoted to collections from the Iroquois, Ojibwa, and eastern Algonquian tribes. The culture of the peoples of the Rocky Mountain Plateau is shown in the southeast quarter with collections of costumes and woven bags. The life of the Woodland tribes is illustrated in the northern part of the hall and includes the culture and religious practices of the Potawatomi, a central Algonquian tribe which formerly inhabited the Chicago region and is connected with its early history. In the center aisle are miniature groups illustrating the summer and winter life of the Sauk and Fox. An exhibit of rare Naskapi material from Labrador occupies the northeast quarter of the hall.

Hall 5: Mary D. Sturges Hall. Indian Tribes of the Great Plains.—The life of these tribes centered about the horse and the buffalo. The exhibits begin with a life-size group showing a Crow woman and horse with full trappings. The southern half of the hall is devoted to clothing and adornments of the Cheyenne, Arapaho, and Crow. Their principal religious observances are typified by exhibits of the paraphernalia of the Arapaho men's societies and by a Sun Dance Altar. In the northern half of the hall is illustrated the life of the Blackfoot, Ute, Bannock, Kutenai, Kiowa, Wichita, Arikara, Osage, and Dakota. The exhibits of Dakota bead and porcupine-quill work are especially noteworthy. Ceremonial objects of the Pawnee are shown in the northeast quarter, and the principal rites of the tribe are illustrated by miniature groups representing the Thunder Ceremony, Morning Star Sacrifice, Medicine-Men's Ceremony, and Purification of the Sacred Bundles.

Hall 6: Indian Tribes of California and Nomadic Tribes of Arizona and New Mexico.—In the west end of the hall are exhibits devoted to the California tribes, which are adequately represented by exhibits of ordinary and ceremonial costume, dance skirts and aprons, ornaments, implements, weapons, baskets, and games. Life-size figures of two Pomo medicine-men, one conjuring seed, another holding a ceremony over the deceased, stand near the west entrance

of the hall. Representative collections of Navaho blankets, including some rare types, and of Navaho silver work, are on view in the south-east section of the hall. On the northeast side are displayed a complete set of masks used by the Navaho Indians in the Night Chant Ceremony; basketry, household objects, games, and ceremonial paraphernalia of the Pima and Papago Indians of Arizona; as well as clothing, war, ceremonial and hunting equipment, and basketry of the Apache Indians of Arizona and New Mexico.

Hall 7: Archaeology and Ethnology of Southwestern United States (*Utah, Colorado, Arizona, and New Mexico*).—The west half of this hall is devoted to the culture of the Hopi of Arizona. At the west entrance is a life-size group showing the interior and exterior of a Hopi house. On the southwest side are shown modern Hopi pottery and textiles, a life-size figure of a bride, and two full-size reproductions of altars. On the northwest side are three more Hopi altars, as well as baskets, boomerangs, a life-size figure of a boomerang thrower, dolls (*katchinas*), and ceremonial masks. In the center of the hall are two life-size figures of *katchina* dancers in costume. On the northeast side are exhibited shields, textiles, painted buffalo robes, and pottery of the modern Rio Grande tribes (New Mexico); and reproductions of the pueblos of Acoma, Hano, Taos, and Walpi. On the southeast side is shown archaeological material illustrating the development of culture in the Southwest from earliest times (Basket Maker, estimated at about 1000 B.C. to A.D. 100) through several phases of Pueblo prehistory down to historic times. Particular attention is directed to the exhibits of rare Basket Maker and Cliff Dweller material, to the pottery recovered by Museum expeditions, and to the exhibit which explains the method of dating ruins in the Southwest by means of tree rings. Included in this hall is the Stanley McCormick Collection.

Hall 8: Mexico and Central America.—In this hall are shown collections from Mexico and Central America, both archaeological and ethnological. The material is arranged, as far as possible, in geographical order. The north side of the hall is occupied by exhibits illustrating the archaeology of Mexico, including a model of the Pyramid of Quetzalcoatl. Especial attention is directed to the very fine smaller stone work attributed to the Toltecs and Aztecs (Case 4). The Toltecs were a highly civilized people, who preceded the Aztecs and built up an empire rivaling the mighty empire of the Incas. In the southeast corner of the hall is shown a Zapotec collection from Oaxaca, southwest Mexico. The Zapotec culture supplies a link with the Maya civilization of Guatemala, British Honduras, and adjacent areas. The Mayas achieved the highest level of culture reached in the New World. Objects illustrating their civilization are exhibited in Cases 12 to 17. The casts displayed in the center of the hall were made from Maya monuments extant in Guatemala, Yucatan, and Honduras. In the center of this hall also are models of a large palace building of Mitla, Mexico, and of a pyramid at Uaxactun, Guatemala.

Farther on are shown collections from the areas lying between the ancient home of the Mayas and Panama. The southwest corner of the hall is occupied by collections illustrating the everyday life of

the present Indians of the whole Middle American region. In many cases these peoples are the lineal descendants of the tribes represented in the archaeological section. Despite more than four centuries of religious and political oppression, much of the old culture still remains, notably in wearing apparel. Large photographs of famous Maya monuments and buildings are shown on the pilasters.

Hall 9: South America.—In this hall are represented the Indians of South America of the past and present. Exhibits representing the various modern tribes of South American Indians occupy the northwest section of the hall. Among the important collections are those from the Chaco Indians; the Jivaro tribe in the forests of eastern Ecuador, represented by four examples of artificially shrunken human heads; and a large collection illustrating the culture of the northwest Amazon, Orinoco Basin, and Guiana tribes. Among the most interesting exhibits are those showing the preparation of food from the poisonous mandioca tuber, and the sacred trumpets used in initiation rites. The remainder of the north side of the hall is devoted to South American archaeology, and illustrates the high culture of the inhabitants of the west coast of South America in pre-Columbian days. The archaeology of Colombia is very well illustrated by fine collections of gold, pottery, and shell and stone work. There are several cases of artistic pottery dating from pre-Inca times, dug up in the Chimu district on the Peruvian coast. The southeast section of the hall is also devoted to Peruvian culture, both as it was developed in the highlands and as it was on the coast. This collection includes a number of so-called mummies, which in fact are desiccated bodies, and reconstructions of the graves in which they were found; also, beautiful pottery from the Nazca Valley in southern Peru. The southwest section of the hall is given to a representation of the little-known Diaguite culture which flourished in early times in northwestern Argentina, and the adjacent cultures of pre-Hispanic Chile.

Hall 10: Eskimo and Tribes of the Northwest Coast of America.—Eskimo culture is illustrated in its wide geographical range, which extends along the shores of America from Labrador to northeastern Siberia. The dependence of the Eskimo on hunting and fishing is made clear by means of four life-size groups, located in the center aisle, showing an Eskimo hunter in his kayak, the chase and capture of seal, preparation of skins, and winter fishing through a hole in the ice. On the southeast side of the hall are located the Eskimo collections. The remainder of the hall illustrates the life, religion, art, and industries of the tribes of the Northwest Coast and related interior groups. A single case (No. 35), illustrating the life of the northern Athapascans of the Yukon Valley, deserves special mention, because of the excellence of the garments and the decoration in porcupine-quill work. The interior Salish tribes are represented in the southeast corner of this hall by ceremonial objects and a life-size group showing their home life and industries. In the bays separating Hall 10 from the transverse halls and against the south and northwest walls of the hall proper are erected totem poles and grave posts from the Northwest Coast tribes.

Second Floor

Hall 23: Edward E. Ayer Pewter Collection.—This room contains several hundred objects of pewter of European, Chinese, and Japanese origin, covering all periods in which pewter was made.

Hall 24: George T. and Frances Gaylord Smith Hall, East Gallery. Archaeology of China.—The object of this hall is to illustrate the development of Chinese civilization in all its varied phases from its beginnings in the neolithic period (about 2000 B.C.) down to the latter part of the eighteenth century. There are two main divisions: the ancient, original culture of China prior to the intrusion of Buddhism, shown in the south half of the hall, and the culture of Buddhistic China, as influenced and modified by religious and artistic currents coming from India from the third century A.D. onward, in the northeast section of the hall. In each division the principle of arrangement is chronological. The collection is particularly strong in Han pottery, cast iron, mortuary clay figures, Sung pottery and porcelain, and Buddhistic and Taoist sculpture, much of it provincial. Two large bronze drums, a cast-iron bell, and a temple censer are shown on bases in the open. A lacquered imperial screen with elaborately carved dragons is exhibited at the north end of the hall.

South Gallery: Models of pagodas from all parts of China, and selected Chinese paintings and tapestries, are exhibited in this gallery.

North Gallery: A fine, carved lacquer screen of twelve panels, from China, eighteenth century, occupies this gallery.

Hall 30: Chinese Jades.—This hall contains more than a thousand examples of carved jade, arranged in nine cases in chronological order from the early archaic period (about 2000 B.C.) down to the end of the nineteenth century. On the walls there are an embroidered screen of the K'ang-hi period and an imperial tapestry.

Hall 31: H. N. Higinbotham Hall. Gems and Jewels. See page 44.

Hall 32: West Gallery. Ethnology of China and Tibet.—Tibet is represented in the north part of the hall by exhibits of textiles, looms, clothing (in a series of costumed figures), jewelry, saddlery, weapons, armor, ceremonial scarfs, metal ware, and household utensils. The Lamaist religion, a form of Buddhism introduced from India, is illustrated by images, paintings, sculpture, musical instruments, and other objects used in the Lama temples. A large cast-iron temple bell is worthy of special attention. In the central portion of the hall are shown weapons, suits of armor, imperial costumes, fans, basketry, musical instruments, bird and cricket cages, beadwork, and printing equipment from China. The south section of the hall is occupied by representations of Chinese and Tibetan dramatic performances on which a special guide entitled *Oriental Theatricals* has been issued.

Ground Floor

Hall A: Joseph N. Field Hall. Melanesia, South Pacific.—This hall contains ethnographical material from Melanesia and New Guinea. The Melanesian collection is regarded as the most comprehensive in this country. At the north end are the collections from New Ireland, notable for the elaborately carved and decorated ceremonial masks and wooden figures. Next comes the general collection from New Britain, including large masks of quite a different type. The peculiar types of decorated spears, clubs, clothing, and ornaments from St. Matthias are shown in one case. The Admiralty Islands are represented by large wooden bowls, baskets, drums, carved figures, ornamented weapons, clothing, and personal ornaments. The central part of the hall is occupied by exhibits from New Guinea. Here may be seen a great variety of wood-carvings, human and animal figures, masks, shields, bowls, and large wooden drums. Interesting types of ornamental designs can be seen on pottery, string bags, spears, and many other objects. Next comes material from the Solomons, New Caledonia, and the New Hebrides. Of special interest are the inlaid work in shell from the Solomons, the New Caledonian stone clubs, and the ancestral skulls from the New Hebrides. In the southwest corner of the hall are two cases of material from the little known Rennell, Bellona, and Santa Cruz Islands. In most of the cases photographs are shown illustrating the use of many of the objects exhibited. A general popular description of Melanesia and the life of its native inhabitants may be found in the guide entitled *Ethnology of Melanesia*, published by the Museum and on sale at the north entrance.

Hall A1: Australia.—Five cases in this hall contain material selected to illustrate the primary divisions of the simple culture of Australian aborigines. These tribes are still in a stone age state of development, with no agriculture, no domestic animals except the dog, and no musical instruments. Their spear heads of stone are exceptionally well worked, and spear points made from fragments of glass obtained from Europeans are delicately flaked. Many devices credited with magical powers are displayed. Varieties of boomerangs, shields, clubs, and spear-throwers are regionally classified in the exhibit.

Hall B: North American Archaeology (*excepting that of the Southwest*).—It is customary to divide North America into twelve archaeological culture areas. This classification has been made on the basis of similarity of traits; for example, pottery, weaving, stone and copper artifacts, burials, and houses. These culture areas are represented as far as possible in geographical order. There are exhibits of artifacts from the North and South Atlantic regions, eastern Canada, and the Iroquoian areas, as well as from the lower and middle Mississippi regions including Arkansas, Ohio, Illinois, and Indiana. The richest culture of prehistoric North America is represented by a collection from the Hopewell Mounds of Ohio, characterized by a high development of art in sculpture and design. In conjunction with this is shown a miniature model of the Serpent Mound. At the west end of the hall is a full-size reproduction of an Indian mound containing an exposed burial. A group of three life-



REPRODUCTION OF ILLINOIS MOUND-BUILDERS' GRAVE

On exhibition in Hall B. The skeleton and burial paraphernalia were presented to the Museum by Dr. Don F. Dickson of Lewistown, Illinois

size figures of Indians illustrates the manufacture of stone implements. At the west entrance of the hall is a special case which shows some of the important types of archaeological objects found in North America and the distribution of each type or group.

Hall C: Stone Age of the Old World.—The exhibits in this hall are arranged in chronological sequence to illustrate the main stages of man's cultural and physical development from approximately a million years ago down to the dawn of history, principally in western and central Europe. On the south side of the hall are diorama groups most of which contain life-size restorations of early types of man. The scenes in these, with the exception of Group No. 1, represent actual prehistoric sites.

The groups are as follows: (1) Chellean scene, northern France; (2) Neanderthal family at Devil's Tower rock shelter, Gibraltar; (3) cave of Gargas, Haute-Garonne, illustrating the dawn of art in the Aurignacian period; (4) sculptured frieze of Le Roc, Charente, illustrating the art of the Solutrean period; (5) bison of clay at Tuc d'Audoubert, illustrating the art of the Magdalenian period; (6) original Magdalenian skeleton, Cap Blanc, France; (7) rock shelter of Cap Blanc, Dordogne, showing frieze of animals and Magdalenian sculptures in high relief; (8) Mas d'Azil boar hunting scene; (9) neolithic sun-worship, Carnac, Brittany; (10) Swiss Lake Dwellers. Human remains, artifacts, and remains of contemporary animals are shown in fifteen cases so arranged that the culture of each period may be studied opposite the diorama characterizing the same period.

Of special importance among the collections in this hall is the original Cap Blanc skeleton of a Magdalenian girl. Likewise treasured for their rarity are fragments of human remains from the Neanderthal and Azilian periods, as well as additional Magdalenian material. Noteworthy also are the La Souquette Middle Aurignacian necklaces and the type collections from Tarté and Solutré. While European material dominates the type collection in general, representative examples from Asia and Africa are shown for purposes of comparative study. On the north wall are shown drawings depicting reconstructed scenes of paleolithic times. A large photograph of the Predmost mammoth pit is worthy of note.

At the entrance to the west end of this hall is an exhibit called *The Ancestry of Man*, designed to show the relation between mankind and other primates, and particularly the inter-relationships of various extinct and living races of the human family.

Hall D: West and Central Africa.—The exhibits in this hall are arranged in geographical order, beginning with the Cameroon region of west Africa and extending through the Congo area and Angola (Portuguese West Africa). The section illustrated in greatest detail is that of Cameroon, on the north side of the hall, where skill in wood-carving, bronze casting, and beadwork attain a standard unsurpassed in any other part of Africa. The finest examples of the woodworker's craft are displayed in the large wall case at the west end of the hall. This exhibit includes a series of door posts and window frames, along with such objects of household use as wooden beds and stools. In the center of the hall are three life-size figures of Cameroon medicine-men. These symbolize the main current of African thought, for they repre-

sent witch-doctors engaged in magical ceremonies which are deemed necessary to cure the sick, to make it rain, and to appease the ghosts of ancestors. An excellent collection of bronzes as well as wood and ivory carvings from the west African city Benin, testifies to the high development of Negro art. Along the south side of the hall are exhibits representing warfare, handicrafts, and domestic articles of Congo Negroes and similar objects from Angola. Numerous photographs in the cases illustrate the way in which the objects exhibited were made and used in the country of their origin. Other pictures have been selected for the purpose of giving an accurate impression of the many physical types represented by the races of Africa. A guide entitled *Ethnology of Africa*, published by the Museum, is on sale at the north entrance.

Hall E: Madagascar; East, South, and North Africa.—The east half of this hall is occupied by a collection from Madagascar. The natives of Madagascar are of mixed Asiatic and African origin, and the exhibit forms a link between the African exhibits and the Polynesian and Malayan exhibits shown in the adjoining halls to the south. This is the only Madagascar collection of importance in the United States, and is believed to be the most complete in existence. It includes implements and utensils of all sorts, weapons, jewelry, wood-carvings, ornamental iron work, textiles, and paintings. Much of the work has considerable artistic merit. The jewelry, wood-carvings, and textiles are of especial interest. The textiles are woven from silk obtained from both wild and domestic silkworms, cotton, hemp, raffia, banana fiber, and the inner bark of trees. There is on exhibition a unique collection of raffia cloths decorated with elaborate designs made by the warp-dyeing process.

The west end of the hall is occupied by collections from east, south, and north Africa. Several distinct cultures are represented, including those of Bushman hunters, camel keepers of Abyssinia, and the warlike, pastoral Masai. Two cases displaying objects from north Africa are placed midway in the hall. The rugs and clothing of the Kabyle are excellent examples of weaving and dyeing, while the jewelry of these tribes makes an attractive exhibit. One of the two cases containing objects from north Africa is devoted principally to a display of objects used by the camel-keeping Tuareg of the Sahara.

Hall F: Polynesia and Micronesia.—This hall contains collections from Fiji, Samoa, Tonga, the Cook Islands, Hawaii, New Zealand, and the Society and Marquesas Islands in Polynesia, and from the Gilbert, Caroline, and Marshall groups and various outlying islands in Micronesia. Of especial interest are the fine collections of painted bark-cloths and weapons from Fiji, Tonga, and Samoa. Noteworthy are carved ceremonial paddles and adzes from the Cook Islands. The New Zealand material illustrates well the culture of the ancient Maori. Jade implements and feather robes are prominent features of this exhibit which is regarded as the best in the United States. The eastern end of the hall is occupied by a complete Maori council house from New Zealand, the only one in America and one of six in existence. This structure is sixty feet long and fourteen feet high. The front and all the wooden parts in the interior are covered with carvings and paintings in the best style of ancient

Maori art. Among the objects from Micronesia the armor and tooth-edged weapons of the Gilbert Islanders and the curious weapons and implements from Matty Island are of especial interest. A tapa mosquito curtain from Fiji fills an entire case in the center aisle. A guide entitled *Ethnology of Polynesia and Micronesia*, published by the Museum, is for sale at the north entrance.

Hall G: Malay Peninsula and Malay Archipelago.—In the west section of this hall are illustrated the cultures of the island of Sumatra, chiefly represented by the Batak and Menangkabau (on the north side of the hall), the ethnology of Nias, a small island off the west coast of Sumatra, and of the Semang, Sakai, and Malay of the Malay Peninsula (on the south side of the hall). Exhibits from the Menangkabau are continued in the east portion of the hall, which in addition is devoted to the cultures of Java, Madura, Borneo, and Formosa. The entire process of making batik-cloth is illustrated and supported by many fine examples of batik fabrics. Puppets, masks, actors' head-dresses, actors' costumes, and the musical instruments of an orchestra such as accompanies performances, testify to the high development of dramatic art in Java. There are four notable ancient stone sculptures from Java, and a remarkable collection illustrative of the life of the Dyaks of Dutch Borneo. The center of the hall is occupied by a miniature model of a Menangkabau village, a life-size figure of a Semang pygmy shown in the act of making fire, and a life-size figure of a Dyak hunter. Life-size figures of a Menangkabau bride and groom form a striking exhibit. Attention should especially be called to the numerous fine wood-carvings and textiles in this hall. The Arthur B. Jones Collection is included in the hall.

Hall H: Philippine Islands.—The collections in this hall (including the Robert F. Cummings Collection) are so arranged as to emphasize the outstanding characteristics of the principal pagan groups throughout the archipelago. Comprehensive exhibits illustrate the economic and ceremonial life of the Tinguian. A miniature village of this people stands on the south side in about the center of the hall, while a life-size group pictures their most noteworthy industry—the forging of head-axes and spear-points. The Igorot are represented by two groups—one, a miniature village illustrating the daily life and activities of the people; the other, a life-size group showing the making of pottery. Suits of armor, and cannon and other weapons from the Moro are worthy of particular attention. At the east end of the hall is a group consisting of six life-size figures representing Bagobo weavers engaged in preparing and weaving Manila hemp.

Hall J: Archaeology of Egypt.—Human mummies and coffins ranging in date from the tenth dynasty to the Roman period (i.e. from about 2300 B.C. to A.D. 200) are assembled in built-in cases along the north wall of this hall. X-ray photographs of some of the mummies are shown in a case near-by. Painted linen shrouds from Late Egyptian mummies occupy the ends of the north wall cases. The backs of these cases are covered with textiles, large hangings, and parts of decorated garments of the Coptic period. Other Coptic garments and ornamental tapestries and embroideries occupy a built-in case on the south wall. East of them are mounted manuscripts on papyrus. Another case on the south wall contains a group of stelae.

On the east wall and the wall north of the west stairway are displayed tomb-sculptures and paintings. This exhibit includes a statue of the goddess Sekhmet. Two complete tomb chapels of the Old Kingdom have been erected in the northwest corner. There also stand three late sarcophagi of red granite, black granite, and marble, respectively. The largest case in the hall, under the west stairway, contains a wooden boat almost four thousand years old, found buried beside the pyramid of King Sesostris III at Dahshur. A prehistoric Egyptian body, buried long before mummification was practised, is shown in a burial pit, surrounded by pottery. Other exhibits are devoted to statuettes in stone, bronze and wood, ushebti, offering-tables, tomb and memorial tablets, alabaster and other stone vases, pottery, faience and glass, jewelry, toilet articles, charms, beads, tools, weapons, wooden furniture, and mummified animals. All the foregoing are original objects. Reproductions shown include only the famous Rosetta Stone, the elegant papyrus of Ani, and certain important tomb and temple sculptures the originals of which are still in Egypt.

Hall L: Korea, Siberia, India, Burma, Siam, Ceylon, Andaman and Nicobar Islands, and the Ainu.—Ethnological collections from both the primitive and advanced cultures of north-eastern and southeastern Asia are shown in this hall. The west end contains the clothing, household objects, weapons and tools of the primitive peoples of eastern Siberia, of the Ainu of Japan, and of the Koreans. Near the northwest door of the hall are two large Siamese shadow figures, mounted on glass and illuminated from behind to show them as they appear to the spectator at a Siamese shadow play. Extensive collections from India, including musical instruments, weapons, textiles, clothing, ornamental brasses, architectural wood carving, and a model of the famous Taj Mahal fill the eastern half of the hall. Particularly notable is the inset case in the center of the east wall exhibiting Indian sculpture of the first century of our era and later. Exhibits from Ceylon, Burma, and Siam, of which the most interesting are perhaps the carved wooden masks, and the models of boats and carts, are along the north wall. There also are two alcoves containing collections from the primitive tribes of the Andaman and Nicobar Islands in the Bay of Bengal.

DEPARTMENT OF BOTANY

Second Floor:—Halls 25–29

Hall 25: Food Plants.—The south side of this hall is occupied by food products of vegetable origin: the small grains and corn with their products, breads and alimentary pastes, starches, sugars, edible oils and fats, leguminous seeds, nuts, spices, and beverages.

The principal grains such as wheat, rice, and rye, are exhibited, and, in more detail, heads of the chief wheats and barleys of the United States with the United States government grain standards. The exhibit includes the primitive cultivated grains, einkorn, emmer and spelt; also samples of ancient barley and wheat from Mesopotamia reputed to be 5,000 years old, and of wheat from the pyramids of Egypt. A miniature mill illustrates the modern process of flour-

making, and various samples show the steps in manufacture and the characteristics of the chief commercial grades of flour. The five main types of corn are shown; also ancient corn from the Mound Builders, Cliff Dwellers, and Peruvian burials. Products manufactured from various small grains, and a detailed exhibit of those from corn kernels, are displayed, the latter with material illustrating the steps in their manufacture.

Cane and beet sugar, in an exhibit illustrating various steps in manufacture, are shown together with various forms of sugar from native markets of many countries. Edible vegetable oils, domestic and foreign, are displayed with the seeds or fruits from which they are obtained. The chief commercial starches of the world are shown in conjunction with their respective plant sources. Leguminous seeds from various countries give an idea of the many varieties that are used for food. Exhibits of spices and nuts furnish an interesting study in plant geography. Common beverages, it is demonstrated, are of vegetable origin, and fall into two main groups. One group includes coffee, tea, cacao, maté, cola, guaraná, etc., with mildly stimulating properties due to caffeine, theine or similar alkaloid. The other group comprises fermented beverages in use in all parts of the world, such as palm wine, piwarri, awa, and pulque, as well as the more familiar cider, grape wines, etc., with their distilled derivatives. A large variety of tea and coffee is shown together with an exhibit of the New York Coffee Exchange standard of grading. Enlarged photographs portray the principal steps in the production of these commodities. In proximity to the collections of coffee and tea samples are dioramas showing on a small scale a modern coffee plantation and a tea plantation. In a separate floor case there is a natural size reproduction of a tea bush in flower and fruit. In a case near the east end of the hall are shown the principal vegetable foods of New World origin. The chief edible fruits are generally omitted from the special food plant display, being well represented throughout the botanical exhibits in the adjoining Hall 29.

Palms.—The north side of Hall 25 is devoted to palms and their economic products. The collection includes palm material from almost all tropical parts of the world. It contains many unusual and interesting specimens, such as the so-called double coconut of the Seychelles Islands, which has the largest seed in the plant kingdom. There are also numerous entire bunches of fruit among which those of the South American *Mauritia* and *Attalea* palms are notable for their size. Most impressive of all for its large size is the fruit cluster of a raffia palm which occupies a separate case. A case is given to the display of the enormous leaf stems of the larger palms in which the entire length of a leaf may be as much as forty feet. A spiny palm from Surinam and a Nipa palm from the East Indies also occupy separate cases. In the northeast section of the hall is shown the flowering and fruiting top of a coconut palm.

Palms furnish many of the necessities of life in the tropics, yielding edible fruits such as dates and coconuts, edible oils, sago, sugar, and drinks, fermented and unfermented. The stems are used in the construction of dwellings, the leaves for thatching, basket-making, hats, mats, etc., and the fibers for making ropes and textiles.



ALPINE VEGETATION

A large diorama in the Hall of Plant Life showing the vegetation above the timber line of the Rocky Mountains. It represents a scene in the Medicine Bow range of southeastern Wyoming.

Hall 26: Charles F. Millspaugh Hall. North American Woods.—The exhibits in this hall represent the principal trees and woods of North America. They are arranged in the order of their botanical relationship, beginning with the conifers which are at the northwest end of the hall. Each exhibit includes a part of the trunk of a tree, a transverse or cross section of a trunk, and one or more boards representative of the typical grain and appearance of the wood. Generally there are a quarter-sawed board and a flat-grained one. These specimens are supplemented by photographs of the living tree under summer and winter conditions, and in some cases of a branch in fruit or flower; a map to indicate the area of distribution; and a descriptive label summarizing the principal characteristics of the tree, and properties and uses of the wood.

Hall 27: Foreign Woods.—In the east half of this hall are shown a collection of woods of the Old World. Those of India, Africa and Australia are on the south side, and European and Japanese woods are on the north. The west half of the hall contains West Indian, Mexican, and Central and South American woods. This collection is still incomplete, but contains most of the foreign woods now imported into the United States. Of the new exhibits the most noteworthy are those of Paraná pine and embuia, the principal commercial woods of the Amazon valley, and a display of the various species of American and African mahogany.

Hall 28: Plant Raw Materials and Products.—On one side of this hall are displayed fiber plants such as cotton, hemp, flax, jute, manila hemp, sisal hemp, and their products. On the other side are shown varnish resins, lacquers, and lac, wood distillation products, resin and turpentine methods, cellulose and paper pulp, cork, tanning materials, dyestuffs, rubber, gums, waxes, perfume and flavoring oils, paint and soap oils, tobacco, and crude drugs.

Where possible a specimen or a photograph of the fiber plant, or the part of the plant that yields the raw material for fiber-making, is shown in connection with material illustrating stages in the preparation of the fiber and its products. Basketry, broom and hat making materials are shown in the same manner.

The display of resins is unusually fine. Wood distillation, although an old industry, has very recently made distinct improvements in methods and the number and value of its products. These are shown in detail.

Vegetable dyes and tanning agents, oils, waxes, and rubber are of interest because of their industrial application. The exhibit of rubber includes many of the principal varieties of crude material, but is still incomplete.

In the center of the hall are reproductions of a long-staple cotton plant, and of a tobacco plant in flower.

Hall 29: Hall of Plant Life.—The exhibits in this hall are planned to furnish a general view of the entire range of plant life, including various extinct groups, and at the same time to show as many as possible of the most important useful plants of the world. Beginning at the northeast corner of the hall, the lowest order of

plants, the bacteria, are followed by algae, fungi, mosses, and other flowerless plants; next are conifers; and finally the flowering plants, which occupy the greater part of the hall. One of the most noteworthy of the exhibits is a trunk of the curious cannon-ball tree of northern South America, with showy flowers and large spherical fruits, at the south end of the hall. Other interesting plants represented are pepper, breadfruit, the giant waterlily known as *Victoria regia*, pitcher-plants, citrus fruits, poison ivy, ragweed, mango, cacao, passion flowers, anatto, cacti, mangrove, Brazil nuts, souari nuts, chicle, coffee, banana, pineapple, vanilla and other orchids, etc. In their respective places among the various plant families represented are found also some of the common wild flowers of the United States. At the north end of the hall is a large group illustrating the alpine vegetation of the northern Rocky Mountains. New exhibits are being added continually.

Since plants cannot be so preserved as to retain their natural appearance, most of the exhibits in this hall are produced in the laboratories of the Museum. Plants collected in the field serve as models for these accurate reproductions, which are made by skillful employment of materials such as glass, celluloid, wax, etc.

On the west wall is a series of mural paintings, illustrating interesting and remarkable plant forms from various parts of the world and portraying the native habitat of many plants represented in the botanical exhibits.

Third Floor

The Herbarium.—In rooms over Hall 25 are installed the large study collections, consisting of a herbarium of the plants of Illinois, the famous Harper collection of fleshy fungi, and a general herbarium, including the University of Chicago collection. In all, more than 940,000 specimens are available. The herbarium is especially rich in plants of tropical America.

Wood Collection.—A classified collection of named woods, mainly tropical American, including more than 12,000 specimens, is located on the third floor.

On application to the Director of the Museum, these third floor reference collections are made accessible to persons particularly interested.

DEPARTMENT OF GEOLOGY

Second Floor:—Halls 31, and 34-38

Hall 31: Gems and Jewels. *See page 44.*

Hall 34: Minerals, Crystals, and Meteorites.—The east half of the hall is occupied by the systematic collection of minerals. In this collection the specimens are grouped according to their chemical composition. Beginning at the east end of the hall, the minerals which are native elements are shown first, then follow mineral sulphides, haloids, oxides, carbonates, silicates, phosphates, etc., in order. The series ends with the hydrocarbons. Large specimens are for the most part installed in separate cases among which are dispersed pyramidal cases used for smaller specimens. Five large

specimens of unusual merit—a geode, a fluorite, two tall selenites, and what is probably the largest known lapis lazuli—are prominently displayed in four individual small cases. Minerals such as realgar and proustite, which fade or change color on exposure to light, are covered by boxes which can be raised for examination of the specimens by pressing a button situated just below the sash.

Since quartz and calcite are among the most abundant of minerals, five cases are devoted to quartz and its varieties and three to calcite. A single case at the east end of the hall contains specimens illustrating a number of the characteristic features of agate. The various species of mica occupy a single case. At the end of the series is shown a large collection of pseudomorphic minerals. There is also an exhibit of radiographs made by a number of different species of radioactive minerals. The William J. Chalmers Crystal Collection follows. This collection illustrates, by means of carefully selected mineral specimens, the systems according to which minerals crystallize, and the varying development of crystal form in each system. Many types of twin crystals and other crystal groupings are illustrated, as well as various features of crystal growth, such as zone structure, inclusions and phantoms. Many of the crystals are of gem quality and would have been cut for gems but for their preservation in this collection. The series of tourmalines is especially remarkable for the variety of colors and forms shown. A case of amber and one of ornamental minerals supplement the mineral collection.

Following these, twenty cases are devoted to the exhibition of one of the largest collections of meteorites in the world—in fact, the largest, as regards the number of falls represented. More than two-thirds of all known meteorite falls are represented by specimens in this collection. Some of the specimens are in the form of polished or etched slabs, which display the interior structure of meteorites, while others are unbroken and show how the meteorites appeared when picked up immediately after their fall. The larger examples are installed in individual cases. The specimen of greatest size thus shown is an iron meteorite weighing 3,336 pounds. The exhibit also contains two of the largest known individual stone meteorites, one being the largest ever seen to fall, and the other the largest ever found. Meteorites, aggregating more than a ton in weight, from the famous locality at Canyon Diablo, Arizona, are shown. They include one weighing 1,013 pounds. Etched faces on many of the specimens of iron meteorites illustrate the peculiar figures which distinguish these meteorites from terrestrial iron.

Hall 35: Clarence Buckingham Hall. Physical Geology, Rocks.—The collections at the east end of the hall illustrate various phases of physical geology. These include specimens showing wear or erosion of rock by ice, wind and water, a great variety of forms of concretions, and specimens illustrating such important groups as volcanic products, dendrites, tufas, veins and vein structures, faults, folds, joint and cave formations. Contorted and ropy lava surfaces from Hawaii, from the Mount Taylor volcanic region in New Mexico, from Vesuvius, and from other well-known volcanoes, and also volcanic bombs from France and New Zealand, are conspicuous among

the volcanic specimens. There are also shown many examples of such frequently mentioned substances as volcanic ash, lapilli and tuffs.

The internal structure of the earth is illustrated by a model, and another model shows the forms assumed by intrusions of rock from the depths into rock nearer the earth's surface.

In one case are exhibited many dendrite specimens, which are branching, moss-like forms deposited by water seeping through cracks in rocks. These are objects of unusual delicacy and beauty. In another case are specimens of ripple-marked sandstone of unusual size and perfection. These display large surfaces ripple-marked by wave action in a long distant past, exactly as the sands of lake and sea shores of the present day are scored.

Cave products occupy one case. While these consist largely of lime stalactites and stalagmites, other cave products such as floor deposits and gypsum rosettes, are also represented. Caves of an unusual type in Utah, containing huge transparent gypsum crystals instead of the usual carbonate of lime stalactites, are represented by a number of crystals which have been so installed as to reproduce the appearance of a cave. Artificial lighting of the exhibit serves to bring out the transparency of the crystals. A large fulgurite or "lightning tube" more than eight feet long, which was formed when lightning struck into an Indiana sand dune, occupies a case by itself. In an adjoining case, smaller fulgurites from other localities show the effects of lightning on both sand and rock.

Other cases contain specimens illustrating glacial markings, rock weathering and concretions. Two large rock slabs, displayed on bases, show, in unusual perfection, the effects of glacial planing and grooving of rock.

A large specimen of lodestone, weighing 400 pounds, has unusual magnetic power which is illustrated by attached metallic objects.

A model of the Natural Bridge of Virginia is shown. Besides being a faithful reproduction of the bridge, with the associated scenery, the model illustrates a number of details of rock structure which occur on too large a scale to be shown by specimens.

The western half of the hall is occupied by a large rock collection consisting of specimens of uniform size of the important rock types.

Dominating the west end of the hall is a model, nineteen feet in diameter, of the visible hemisphere of the moon. It is much the largest and most elaborate representation of the moon's surface ever made. The characteristic volcanoes, plains, mountain ranges and other features of the moon are shown in their true positions and relative extent. In order to make the relief more distinct, the vertical scale of the model has been made about three times greater than the horizontal.

The walls of two corridors connecting Clarence Buckingham Hall with adjacent halls are occupied by a collection of relief maps, which show the topography of selected portions of the earth's surface. Some of these are representations of well-known scenic areas. Others illustrate the topography of states and other political divisions. Of special geological interest are the relief maps of the region about Chicago, which show the distribution of land and water in this district during a number of stages following the glacial period.

In one of the corridors is a case of fluorescent minerals, illuminated alternately by ordinary light and ultra-violet light. It thus demonstrates the brilliant colors some minerals assume when illuminated by ultra-violet light.

Hall 36: Petroleum, Coal, Clays, and Sands.—The east end of this hall is occupied by petroleum exhibits, beginning with oil sands of the American oil fields, followed by crude petroleums grouped geographically.

A model illustrates the underground features of an oil field and the machinery by which the wells are drilled and the oil brought to the surface. There is also a model of the original Rockefeller oil refinery at Cleveland. The great variety of uses of paraffin in the manufacture of familiar objects of everyday utility is illustrated by many specimens. The uses shown range from waterproofed clothespins and shotgun shells to flowers for women's hats, chewing gum and candles. With the familiar products of paraffin are shown other less well-known products and uses. The ozocerites or native paraffins, which have properties somewhat different from those of paraffin extracted from petroleum, are included in this collection. Another collection illustrates the uses of petroleum jelly, petrolatum, and vaseline in numerous medicinal and toilet preparations. A case in the center aisle covers, in synoptic form, by numerous specimens, the entire field of petroleum products. Each kind of use is represented by a single specimen accompanied by a photograph, and these uses are so numerous that the collection fills a large case. While many of the products, such as gasoline, and lubricating and illuminating oils, are well known, there are numerous others, such as the fly repellants used by dairymen, which are less familiar.

Numerous varieties of coal, including specimens from many of the important coal fields of the world, are shown in a series of cases near the center of the hall. A vertical section of a coal seam five feet thick represents the coal as it lies in the mine before it is mined. A stump of a tree which was growing at the time coal was formed illustrates the vegetable origin of coal. The origin of coal and the relation of the several kinds to each other are shown in a synoptic collection. With the coal collection there is a small model of a coal mine. A case contains many substances obtained as by-products from coal during the manufacture of illuminating gas in the processes employed by the gas company of London, England. Although this case can hold only a few of the thousands of such by-products, their diversity and brilliant colors make them well worthy of attention. An adjoining case contains a less highly colored but interesting collection of the more important coal by-products obtained in this country. In this case also is a synoptic collection of the kinds of mineral fuel, showing the relations of these fuels to each other.

Adjoining the coal collection are cases containing oil shales, asphalts and specimens illustrating the important uses of asphalt.

A case in the center aisle contains diamonds, specimens of the rocks in which diamonds are found, and minerals associated with them.

Two cases illustrate the occurrence and uses of peat. They demonstrate that peat may be used for many purposes besides fuel.

In a near-by case a model of a lake in which peat is forming illustrates the subject in great detail. The subject is further illustrated by a collection of the products of a single bog which shows the transition from rushes and reeds at the surface, through beds of peat of varying aspects, to the most completely formed peat at the bottom of the bog.

A collection of graphite contains, besides specimens of graphite from many localities, numerous specimens illustrating the use of this material. Of general interest is a group of specimens showing all stages in the manufacture of the common lead pencil. Sulphur from many parts of the world is shown in another case which also contains specimens of the minerals which are exploited for magnesia.

The west end of the hall is occupied by exhibits of clays, soils, sands and other earthy materials. One case is devoted to specimens which show how soil is formed, of what it is composed, the plant foods it contains and the nature of the several kinds of soils, such as loams and marls, which are ordinarily recognized by farmers. Four and a half cases contain a collection of soils arranged according to kind with specimens selected to show the spread in color, texture and other visible features in soils of each kind.

In the large clay collection the clays are arranged according to kind. As most clays are used in the form of brick, tile, pottery and other burned wares, there appears with most of the specimens a little brick burned from the specimen itself. Specimens in one case illustrate changes in the appearance of burned clay wares produced by changes in the conditions under which they are fired, and show the effect on the burned wares of the more important minerals often found in clay. The manufacture of common brick is illustrated by a large model of a brick yard which shows all stages of manufacture from digging the clay to loading the finished brick on cars. There are also shown collections of other clay-like and earthy minerals of industrial importance. These include fuller's earths, bentonites, talcs and mineral pigments. A collection filling three cases illustrates the uses of silica. It includes ornamental and gem varieties, well-known substances such as common plastering and building sands, and such comparatively little-known things as a flask for chemical use blown from pure, melted quartz. The manufacture of portland cement is illustrated by a large and elaborate model of a modern plant. All details of the work are represented from mining limestone and clay to the storage of the finished cement. The manufacture is further illustrated by a case containing examples of the minerals of which cement is made, of the mixtures, and of partly finished cement in all stages of its manufacture. The materials added to cement to make concrete are also shown. A collection occupying half a case illustrates, in synoptic form, the mineral substances which have been used in a large way for structural cements from remote antiquity to the present time. This collection includes such diverse materials as the clay used as cement by primitive peoples and the special alumina cements just coming into use. A model of a large Minnesota iron mine stands against the west wall.

Hall 37: Frederick J. V. Skiff Hall. Ores, Marbles, and Alkalies.—The east half of the hall is occupied by a collection of ores of the precious and base metals. The ores of each metal are

grouped separately, except the gold, silver and lead ores, which are shown together. Under each group the specimens are arranged in geographical order according to country, state and mining district. In a case against the east wall, examples of those minerals which are frequently mistaken for gold are shown, and with them, for comparison, gold from a variety of occurrences. Interspersed with the groups of ores are models which illustrate methods of mining and treating ores of the more important metals. Among these a model of a gold mine shows ordinary methods of mining vein ores. Treatment of gold ore for extracting the gold is illustrated by two models, one of a stamp mill, the other of a simple form of cyanide plant. A model of a lead blast-furnace illustrates one common method of extracting lead and silver from the ore. A model of an iron blast-furnace and its accessories, partly in section, illustrates the fundamental process in the metallurgy of iron. With this model are shown models of two furnaces which illustrate the simple methods of iron smelting used in earlier times or by primitive peoples. One of the usual treatments for separating ore of any kind from admixed rock is shown by a model of a jig. With many of the lesser known metals, and some others, are placed small collections which illustrate the utilization of these substances. The uses of the rare metals are especially illustrated in this way.

As the small specimens of which most of the ore collection is composed do not show sufficiently well the appearance of ore in mass, several large specimens of various ores have been placed in individual cases. Near the center of the room a collection of native coppers in a separate case merits attention. In the west part of the hall are fifteen cases filled with marbles and other ornamental stones from many parts of the world. The specimens are large enough to display to advantage the characteristic patterns of each variety. Building stones in the form of four-inch cubes fill five cases.

Collections of industrially important non-metallic minerals occupy the west end of the hall. These include barite, fluorite, asbestos, mica, phosphates, grinding and polishing materials, gypsum and borax. Included in the gypsum collection is a case which shows in synoptic form the great variety of uses of this mineral. At the end of this hall are placed soda and potash collections, including a large group of the Stassfurt potash salts and examples of the newly discovered potash minerals of Texas and New Mexico.

In the corridor connecting Halls 36 and 37 is a series of tubes containing rare gases such as argon and helium which are found in minute quantities in the atmosphere. When a button is pushed these gases are excited by an electric current and glow with brilliant colors. These tubes illustrate the source of light in neon signs.

Hall 38: Ernest R. Graham Hall. Fossil Animals and Plants.—In this hall there are illustrated by fossils, and by life-size and miniature restorations and paintings, the important forms of plants and animals which lived on the earth from the earliest to recent times.

The exhibits, as far as possible, are arranged in the order of their geological sequence. At the south end of the hall may be seen examples



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PREHISTORIC THREE-TOED HORSES

Restoration of equine animals of species *Meshippus*, which grew no larger than a collie dog. They lived millions of years ago in the Bad Lands of Nebraska and South Dakota. On exhibition in Ernest R. Graham Hall of Field Museum.

of the oldest known fossils. Progressing northward the visitor finds the plants and animals characteristic of the successive geological periods. Fossils of the latest geological period will be found at the north end of the hall. Above the cases, a series of twenty-eight mural paintings extends entirely around the hall. These murals illustrate characteristic scenes and prominent plants and animals of the geological periods. These paintings, in order, beginning with the earliest period, represent the following: The Cooling Earth, The Beginnings of Life, A Sea Beach of Ordovician Time, A Coral Reef of Silurian Time, A Forest of Devonian Time, North American Reptiles of Permian Time, African Reptiles of Triassic Time, Small Flying Reptiles and Birds of Jurassic Time, Large Flying and Marine Reptiles of Jurassic Time, Swimming Reptiles, An Armored Dinosaur, A Plant-eating Dinosaur, Horned and Carnivorous Dinosaurs, Asiatic Horned Dinosaurs, Duck-bill and Crested Dinosaurs, Four-toed Horses and Primitive Hoofed Beasts, Titanotheres, Primitive Whales, Early Camels and Suillines, Early Elephants and Rhinoceroses, Giant Kangaroos and Wombats, New Zealand Moas, South American Ground Sloths and Glyptodonts, Saber-tooth Tigers and Vultures, Mastodons, Cave Bears, Mammoths and Woolly Rhinoceroses, The Great Irish Deer.

The life of the Cambrian, the earliest period from which fossils have been abundantly preserved, is represented by an extensive series of trilobites, brachiopods, seaweeds and other early forms of life. With them is shown Eozoon, a controverted fossil from a still earlier period. The Ordovician series includes a slab containing remains of the earliest fishes, a number of large fossil trilobites and various brachiopods and cephalopods. From the Silurian Period there are exhibited fossils of straight and coiled cephalopods, corals, crinoids, seaweeds, and great crustaceans called Eurypterids. The Devonian fossils shown include those of fishes, starfishes, sponges, corals and a variety of other invertebrate animals.

Fossils of the Carboniferous Period include a number of trunks, stumps, roots and branches of the large trees, *Lepidodendron* and *Sigillaria*; a series of the great horsetail rushes or *Calamites*, and leaves or branches of various fossil ferns. Life-size restorations of many of these are shown in a large group at the south end of the hall, where a reproduction of a portion of a forest of the period as it appeared in living form, has been constructed. This is by far the most accurate and extensive reproduction of the trees of the Coal Period ever made. During this period reptiles became the dominant form of life, and for the first time the earth was populated with truly land-living animals.

The Permian Period is represented by fossil leaves of conifers and tree-ferns and by remains of fishes, amphibians and reptiles.

The Triassic Period fossils exhibited include fishes from South Africa, tracks of reptiles from Massachusetts, and various fossil plants and shells from Germany. There is much of interest in the Jurassic exhibits. From Solenhofen, Bavaria, come insects and fish beautifully preserved in fine grained lithographic limestone. In the same case are ammonites, a kind of cephalopod which during the Jurassic period attained enormous size and complexity of shell ornamentation.

Vertebrate fossils of the Jurassic Period include a choice series of skulls and skeletons of fish-lizards from England and from Germany. One of the latter shows also the outline of the body of the animal. A beautifully preserved fossil crocodile, ten feet in length, is also shown. Further, there are a large series of fossil fishes, mostly from Bavaria; a few specimens of the rare flying reptiles; a comprehensive series of fossil crustaceans, cuttlefish, crinoids, sponges and other invertebrate animals; and fossils of the plants known as cycads.

A skeleton of the great dinosaur, *Apatosaurus*, of the Jurassic Period occupies a dominating position in the center of the hall. Parts of other dinosaurs from both North and South America are exhibited on pedestals or occupy adjacent cases. A series of miniature models, designed to represent these animals in life, is exhibited near-by.

The Cretaceous Period fossils exhibited include a skull of the great horned dinosaur, *Triceratops*, which occupies a floor case; a lesser skull with nest of eggs, belonging to the related Mongolian dinosaur, *Protoceratops*; parts of skeletons of the swimming reptiles, *Platycarpus* and *Elasmosaurus*; a shell of the great land tortoise, *Basilemys*, and a skeleton of the slender, flying reptile, *Nyctosaurus*. A fossil tree trunk from Alberta, and a series of fossil leaves from Kansas, are among the fossil plants shown. A group of great fossil sponges, various types of fossil mollusks, and a series of models of shells of the chalk-forming animals illustrate the invertebrate life of the period.

With the next period, the Paleocene, the Age of Mammals begins. A rare skeleton of an archaic order, the Amblypods from Colorado, is exhibited in a floor case. Other specimens of new Paleocene mammals, a new genus of horned crocodile (*Ceratosuchus*) and a second skull of long-nosed crocodile are to be found in another case. In case 80, at the north end of the hall, *Barylambda* and other Pantodonts (primitive hoofed animals) and *Bathyopsoides*, a related form, are exhibited. In the same case there is also an example of a horned crocodile from the same locality as the mammals.

In the Eocene, mammals were becoming more abundant. Fossils shown of this period include a skeleton of one of the smaller titanotheres, *Dolichorhinus*, an extensive series of skulls of other Uinta mammals, and contemporary specimens of crocodiles and turtles. Displayed in another case are series of skulls and jaws of South American fossil mammals. In another upright case may be seen a series of fossil fishes, each one encased in its matrix of stone. Various fossil shells, insects, palms and other Eocene plants are included in the series.

These are followed by fossils of the Oligocene Period. Most conspicuous among them are a mounted skeleton and a series of skulls of some of the great titanotheres—an extinct family of hoofed mammals whose members had the general proportions of the rhinoceros, but differed from that animal in the structure of skull and of foot. The titanotheres are further illustrated by a group at the north end of the hall, where a male, female and young are reproduced in life size and bodily form. The *Mesohippus* or three-toed horse of this period is also illustrated by a group placed at the north end of the hall adjoining the titanotheres. Six individuals in life size are shown in this group. A skeleton of a small saber-tooth tiger and skulls

and skeletons of a variety of extinct rhinoceroses, tapirs, wolves and animals of less familiar names, further illustrate mammals of this period. In one slab in a table case are remains of more than twenty individuals of a member of the deer family known as *Leptomeryx*. A number of skulls and jaws of South American fossil mammals are to be found in the series along the west side of the hall.

Conspicuous among the exhibits of the next period, the Miocene, is the slender skeleton of a fossil North American camel. Other specimens include skeletons of the pig-like oreodonts, of extinct flesh-eaters and of rodents; and skulls and legs of a great variety of extinct rhinoceroses, horses, camels, wolves, mustelines and other less familiar extinct species. One of these, *Moropus elatus*, belongs to the same order of mammals as the horse, but it had claws. A model of an immense pair of jaws with fossil teeth set in it, illustrates the size of a great, extinct species of shark. A series of large, spiral fossils designated as "Daemonelix" shows what are probably the natural casts of an extinct plant. Trees related to the South American pine are represented by a series of fossil cones and branches. In the Miocene alcove of the South American series are exhibited a splendid skeleton of the rare *Astrapotherium*, in recumbent position, and one of the equally rare *Homalodotherium* in standing position. In an adjoining case are skeletons of the smaller ground sloth *Hapalops* and one of the cony-like *Interatherium*, together with a large series of skulls of other Santa Cruz mammals. In a floor case may be seen the skull of a baleen whale, *Aglaocetus*.

The remainder of the hall is devoted to fossils of the Pliocene and Pleistocene periods. Being of more recent occurrence, these fossils are preserved in greater variety and completeness than those of earlier times.

In the Pliocene alcove of the South American series is a mounted skeleton of the large glyptodont *Eleutherocercus*; in a floor case in the center is a fine carapace of the related glyptodont *Plohophorus*. On the opposite side of the alcove is a group comprising a skeleton of the smaller glyptodont *Eosclaerocalyptus*, and an articulated skeleton of the slender ground sloth *Pronothrotherium*, with landscape background modeled in low relief. On the east side of the hall are specimens of the North American rhinoceros, *Teleoceras*, a skeleton of the great land tortoise *Testudo orthopygia*, and various smaller specimens.

Among the Pleistocene fossils are to be seen complete skeletons of the Mammoth and Mastodon, of the Irish deer, of three of the large ground sloths of South America, including the great sloth *Megatherium*, a group of two skeletons of *Scelidodon*, and the pampa sloth, *Scelidotherium*, exhibited as a skeleton in the earth. The mounted skeleton of a smaller ground sloth, from the mountains of Tarija, in Bolivia, is also exhibited. In an upright case may be seen a splendid series of skulls of ground sloths varying in size and structure. In the middle of the hall is a skeleton of the huge armadillo-like *Glyptodon*. In upright cases are skeletons of the cave bear of Europe, of the bird *Dinornis* of New Zealand, and of the saber-tooth tiger and wolf of the Los Angeles "tar-beds."

Many less complete skeletons, skulls, teeth, tusks, and other remains are representative of the life of other animals of this period.

Among the specimens is the skull of a cave man accompanied by a stone lamp and other utensils, all partially embedded in a stony cave deposit. Furnishing a climax to the series and illustrating the arrival of Man in the geological succession, there is shown a full-size reproduction of a cave man of the Neanderthal race with members of his family and the rock shelter in which they lived.

DEPARTMENT OF ZOOLOGY

First Floor:—Halls 12, 13, and 15-22

Ground Floor:—Hall N

First Floor

Hall 12: Domestic Mammals (Sculptures by Herbert Haseltine).—Hall 12, which opens into the south end of George M. Pullman Hall (Hall 13), is devoted to a special exhibit of British champion domestic animals sculptured in bronze and marble by the noted sculptor Herbert Haseltine. The figures are done in one-fourth natural size and all are from living subjects especially studied and modeled by the artist. There are nineteen subjects, including horses, cattle, sheep, and pigs, many of them internationally famous in their time on the turf or in the paddock. The collection was presented to the Museum by Trustee Marshall Field.

Hall 13: George M. Pullman Hall. Horned and Hoofed Mammals.—This hall, which is immediately west of Stanley Field Hall, is devoted to horned and hoofed mammals—game animals from all parts of the world. Included are various representatives of the deer family, the antelopes, gazelles, wild sheep, goats, and oxen. In a case near the center of the hall are shown some of the smaller hoofed animals, the dik dik, musk deer, mouse deer and others. Of special interest are: the European red deer, shown in a case near the north end of the hall; and, in the south end, a case with a series of American mountain sheep, and another with a fine male American bison.

Hall 15: Mammals—Systematic.—West of the north end of George M. Pullman Hall is Hall 15. With the exception of those represented in Pullman Hall, it contains members of the principal groups of mammals of the world, arranged, so far as practicable, according to their relationships. At the east end of the hall are certain hoofed animals related to those in Pullman Hall, such as zebras, tapirs, llamas, and wild pigs. Beginning then with the lower forms, the monotremes or egg-laying mammals of Australia and the pouched mammals or marsupials, there are shown various groups, such as rodents, edentates (sloths, anteaters, etc.), fur-bearing mammals, the cat family, the civet family, and the dog family, terminating with the highest mammals, the monkeys and man-like apes. On the north side two cases contain a noteworthy series of North American cats, and black bears and their allies.

Hall 16: Richard T. Crane, Jr., Hall. American Mammals—Habitat Groups.—Hall 16 contains habitat groups of North American mammals. Flanking the entrance at the east end of the hall are

groups of Rocky Mountain goats and Stone's mountain sheep, both of which may also be seen from Pullman Hall. Thence eastward are four groups of the Virginia deer showing the difference in its appearance and habits in the four seasons. These are followed by groups of the American pronghorn antelope, mule deer, Olympic elk, Alaska moose, grizzly bear, and glacier bear. In the western half of this hall are further American groups, including the Alaska brown bear, polar bear, musk-ox, bison, caribou, mountain lion, and beaver. These are followed by groups of some of the more important mammals of South America, the guanaco, tapir, great anteater, and marsh deer. Opposite the North American beaver group is a group of capybara and jaguar represented in a tropical jungle.

Hall 17: William V. Kelley Hall. Asiatic Mammals—Habitat Groups.—An extensive series of habitat groups showing the principal large mammals of Asia and adjoining islands is in course of preparation in this hall. Seventeen of these have been completed out of a total of twenty-one, and another is in course of preparation. Among them are some of the more striking results of the expeditions conducted by Theodore and Kermit Roosevelt, sons of former President Theodore Roosevelt, during the James Simpson-Roosevelts Expedition of 1925 and the William V. Kelley-Roosevelts Expedition of 1929. In the eastern half of this hall are groups of Marco Polo's sheep, Asiatic ibex, Indian rhinoceros, Bengal tiger, the large antelope known as the nilgai or blue bull, and three Indian species of deer—the sambar, swamp deer, and axis deer.

Facing the center of the hall, on the north side, is a group of the very rare giant panda, showing two of these animals in a setting representing bamboo and mountain forest in western China. Opposite this, on the west, is a group of the curious, long-snouted, ant-eating sloth bears of India. On the south side and facing the center of the hall are shown separately the common Indian leopard crouching on a limb of a tree, and the rarer snow leopard with two young.

In the center of the west half of the hall are two large groups of Indian wild oxen or "buffalo." On the south side are water buffalo, shown in a lowland scene, and accompanied by white "cow-herons" and several small hog deer. Opposite are the gaurs or seladangs, magnificent animals of rich coloration and imposing stature. Adjoining these is a group of blackbuck and chinkara—common antelopes of India. A notable group on the south side of the hall is that of the large heavy-bodied goat-antelope known as the takin, from the mountains of western China.

A group of oranges, showing a family party in the treetops of Borneo, occupies a space in the northwest corner of the hall. Near-by, on the south side of the west entrance to the hall, is another group of apes in the treetops, showing the bizarre species from Borneo known as the proboscis monkey.

In the alcove south of the east entrance to Hall 17 is a case devoted to mammals of the Chicago area.

Hall 18: Albert W. Harris Hall. Marine Invertebrates, Fishes, Reptiles, and Amphibians.—The east half of this hall is devoted to marine invertebrates and fishes; the west half to reptiles and amphibians.

Eight cases of marine invertebrates in the east end of the hall contain models of protozoans or single-celled animals, and a series of sponges, millepores, sea-fans, various kinds of corals, sea-stars and sea-urchins. Most of these specimens, however, are necessarily only the limy or horny skeletons of the animals and therefore some of them give no indication of their bright colors in life. But the form and color of the soft-bodied marine creatures like jellyfish, sea-anemones and sea-cucumbers, are well represented by glass models.

The fishes are arranged in two series, one showing representatives of the principal orders and families of fishes, and the other showing special collections of Atlantic and Pacific food and game fishes, and also Chicago market fishes. In the west end of the hall is displayed temporarily a habitat group with a sawfish, small sharks, and rays. Two habitat groups illustrate the insect life of the Indiana dunes and the life history of the tomato worm moth.

The collection of reptiles includes representatives of the lizards, snakes, turtles, and crocodiles. Of particular interest are amphibians and reptiles reproduced in celluloid. Noteworthy among these are an American alligator with nest and eggs, a South American anaconda installed in a natural setting, the so-called dragon lizard of Komodo, and a reticulated python shown coiled about its eggs.

A habitat group of American crocodiles, temporarily detached from exhibits of other reptiles, may be seen in the alcove at the side of the west entrance to Hall 19. These animals are reproduced in cellulose-acetate, a material resembling celluloid.

Hall 19: Osteology—Skeletons.—This hall contains skeletons of the principal vertebrates or backboned animals. These include fishes, frogs and their relatives, birds, and mammals. At the right of the east entrance are the lower forms, fishes, etc., and at the left are the higher apes and man. Near these is an interesting case illustrating the history of the human skull. In the center toward the west end is the huge skeleton of a right whale. East of this is the skeleton of an Indian elephant. Of particular interest among the bird skeletons is an assembled skeleton of the extinct great auk.

Hall 20: Birds—Habitat Groups.—Sixteen bird groups with painted backgrounds are shown in the east half of Hall 20. The majority of the groups are of North American birds, conspicuous among which are the northern loon, golden eagle, California condor, whooping crane, wild turkey, white pelican, and ruffed grouse. There are also groups from tropical America including the flamingo, the jabiru stork, horned screamer, and scarlet ibis.

In the west half of the hall a series of groups is being prepared to illustrate the natural environment or habits of interesting foreign birds. Nine of these groups are completed. The first contains eight emperor penguins obtained in "Little America" by the Second Byrd Antarctic Expedition, and it portrays in an admirable manner the frigid home of these odd-shaped birds. Opposite the penguins is a group of sea birds shown at their nesting grounds on Laysan Island in the mid-Pacific. Conspicuous among them are albatrosses, gannets, and man o'war birds. Adjoining the penguins on the south is a recessed series of three groups showing birds of different environments

in various parts of Africa. In one of these are represented the typical birds of the dense, rain-forest belt on the slopes of Mount Cameroon, Africa. In the next group the village weaver birds and their colonial nesting places are shown in a setting depicting the banks of the Niger in French Sudan, and in the third group are displayed the characteristic birds found in the Kalahari desert in Africa. Five other groups occupy the western part of the north side of the hall. Three of these are devoted to birds of tropical America in settings showing a wealth of tropical vegetation. In central position is a group of the long-tailed quetzal, national bird of Guatemala and one of the most brilliantly colored of all birds. On the right is a group of toucans and smaller birds in a semi-arid forest. In the northwest corner of the hall is a group of the familiar European stork, specimens and accessories for which were presented by the Polish-American Chamber of Commerce in Warsaw, Poland. A pair of adult storks are shown, together with their young and a roof-top nest in a Polish village.

Hall 21: Birds—Systematic.—A systematically arranged collection of birds in this hall includes representatives of the more important orders and families. Cases on the north side of the hall are devoted to North American birds, and those on the south side to birds of foreign countries. The North American series, especially, has undergone revision by which the birds are arranged on natural perches or bases instead of on shelves. Installation is completed for the diving birds, gulls, shore-birds, ducks, hawks, owls, woodpeckers, sparrows, warblers, thrushes, wrens, etc. Species known to occur in the state of Illinois are marked with a red star. Foreign birds occupy the entire south side of the hall and are in process of revision. Among them are several noteworthy cases recently reinstalled, one devoted to ostriches and allies, others to the parrot family, the birds of paradise, the pheasants, grouse, etc. On the north side of the east end of the hall are two wall cases containing extinct North American birds and birds introduced into America. In the alcove north of the entrance to this hall is a case of albino birds and mammals.

Hall 22: Carl E. Akeley Memorial Hall. African Mammals—Habitat Groups.—This, the largest hall devoted to zoology, occupies the entire west end of the building and is divided in the middle by the stairway leading to the west entrance of the building and the James Simpson Theatre. North of the stairway are many groups of African mammals—lions, koodoos, zebras, buffaloes, and various antelopes, including a group of the diminutive antelopes known as dik diks. In the north end, in addition to a group of greater koodoos, are reproductions of a hippopotamus and of a white rhinoceros. These are made in cellulose-acetate by a process originated and developed in Field Museum. More life-like results are obtained by this method than by mounting the skins of animals of this type.

On the south side of the stairs is a group of the rare and strikingly colored antelope known as the bongo, shown in a bamboo forest. Also noteworthy is a very fine example of the giant sable antelope from southwest Africa, as well as the rare giraffe-like okapi. Still



AN AFRICAN WATER-HOLE

Section of a large habitat group in Carl E. Akeley Memorial Hall

other groups are those of hyenas, cheetahs, warthogs, white-tailed gnu, and the curious ant-eating aardvark. Of interest also is a group of Abyssinian dassies or coneys, small animals resembling rodents but related to the hoofed mammals. In temporary position in this hall is a family of gorillas next to the central west wall, and adjacent to it is a group of the distinctly marked guereza monkeys of Ethiopia. At the south end of the hall is a very large group showing various large mammals gathered at a water-hole in Abyssinia. Features of this group, which is the largest in the Museum, are five beautiful giraffes and a black rhinoceros with young.

Ground Floor

Hall N: Marine Mammals.—This hall, devoted to habitat groups of marine mammals, is planned to accommodate ten large groups, of which seven have been completed. In central position as approached from the stairway leading to the ground floor, is a very large and imposing group of northern sea lions, including thirteen animals, and occupying a case forty feet in width and seventeen feet deep. The painted background shows a scene on the coast of Washington where the animals were collected. North of this and also on the west side of the hall is a group of Pacific walrus in a setting of Arctic ice floes suffused by the light of the midnight sun. The elephant seal, largest of all seals, occupies a space south of the sea lions. An enormous bull and four other animals are shown on the beach of Guadalupe Island off the northwest coast of Mexico.

On the north side of the hall is a group of Pacific Harbor seals variously disposed on kelp-covered rocks. On the east side, opposite the walrus, is a group of the peculiar cetacean known as the narwhal. Four animals, modeled in cellulose acetate, are shown swimming about the submerged base of an iceberg. On the south side of the hall, to the left of the elephant seals, is another undersea group showing a pair of manatees or sea cows. Adjoining this on the left is an Antarctic scene of snow and ice with a large female Weddell's seal and her young in the foreground, and others scattered in the distance. Specimens for the last were collected by Rear-Admiral Richard E. Byrd's last expedition to "Little America."

H. N. HIGINBOTHAM HALL

Hall 31, Second Floor: Gems and Jewels.—At head of staircase leading from the south end of Stanley Field Hall.

This hall contains a large and valuable collection of gems and jewels. There are shown many examples of nearly every known gem, represented by both cut and uncut specimens. Many of the specimens are of historic interest and of high intrinsic value. Attention may be called especially to the DeVrees engraved diamond, the Hope, Tiffany and Crane aquamarines, the Russian topazes, the series of cut amethysts, and the Sun God opal.

In the series of diamonds there are shown, besides the engraved diamond already mentioned, four cut stones and rough diamonds from nearly all the important fields of the world. Emeralds are illustrated by crystals from Colombia, Russia and Brazil. There is a fine series

of star sapphires, and both blue and yellow sapphires are represented by large and attractive stones, the largest weighing ninety-nine and one-half carats.

The Crane aquamarine, weighing 341 carats, and several other cut aquamarines of exceptional quality and size, illustrate this variety of beryl in unusual completeness and beauty. Gem topaz, both cut and rough, is illustrated in a variety of colors. Blue, yellow, rose and colorless stones are shown, the finest being the Crane rose topaz of ninety-seven carats. A transparent, nearly colorless crystal of topaz from Brazil, weighing ninety pounds, is also included in the series. Tourmaline, zircon, garnet and peridot are other gem minerals well represented by cut and rough stones. Many cut and crystallized amethysts from Brazil and other countries show the rich purple color and other qualities of this stone at its best. A bowl, nine inches in diameter, cut from one piece of rose quartz, is noteworthy for its rich color and size.

Precious opal is illustrated in a wide variety of colors from all the important fields of the world. Besides the Sun God opal some exquisite specimens of black opal are worthy of special notice. Pearls are illustrated by pearl and shell from several regions, and a collection showing range in color and size of culture pearls, with natural oriental pearls for comparison.

Several crystal balls and various carvings of rock crystal, some of which are of historic interest, illustrate the ornamental and other uses of this semi-precious stone. Many other semi-precious stones are illustrated in the collection both by cut and rough specimens. Gold and platinum are represented by nuggets and other specimens showing modes of occurrence of these metals in nature.

Nine cases in the hall are installed with mounted gems or with worked forms of gold, representing the use of these materials in jewelry among primitive and Oriental peoples in both early and later times. Here are to be seen a number of examples of pre-Columbian gold ornaments from South America, of Egyptian and classical jewelry, and of jewelry from India and Algeria. Babylonian, Roman, and Italian cameos and intaglios are represented by many choice examples.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The N. W. Harris Public School Extension Department prepares small portable cases containing natural history and economic exhibits, and lends them to the schools of Chicago.

This service was made possible by the late Norman Wait Harris, who in 1911 provided an endowment of \$250,000. This endowment has been supplemented in later years by contributions of more than \$224,000 from Mr. Albert W. Harris, son of the founder, and other members of the family.

Approximately 1,200 cases are at present available for this educational work. Other cases are being prepared. During the school year two cases are sent to each school every two weeks. Deliveries and collections are made by special motor trucks.

Examples of these cases are exhibited in Stanley Field Hall.

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

Various educational activities for school children of Chicago are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures. An endowment of \$500,000 was provided for this purpose in 1925 by Mrs. James Nelson Raymond. Since that time, additional contributions totaling more than \$59,000 have been made by Mrs. Raymond.

During the spring and autumn the Foundation provides series of programs consisting of educational motion pictures, lectures, and story hours. These programs are presented in the James Simpson Theatre of the Museum. During the school year members of the Raymond Foundation staff are sent to the public schools of Chicago to give illustrated lectures. As many as 500 such lectures are given during a year. Throughout the year, classes of children from both elementary and high schools, and groups from community centers and other organizations, are conducted on tours of the Museum exhibits by Raymond Foundation lecturers. By arrangement with the Board of Education of Chicago, a correlation of Museum exhibits with the curriculum prescribed for the schools has been effected, whereby children, brought to the Museum by their teachers, study exhibits having a direct bearing on their current classroom work. Raymond Foundation lecturers assist these groups.

THE MUSEUM LIBRARY

The Museum maintains a specialized reference Library containing approximately 110,000 books and pamphlets on anthropology, botany, geology, zoology and related subjects. Among these are the proceedings, transactions and publications of learned societies, academies and universities throughout the world, constituting a collection invaluable in research work.

The ornithological section includes many rare and beautifully illustrated volumes, the greater part of which were a gift from the late Edward E. Ayer, former Trustee and first President of the Museum.

Also especially noteworthy is the Library's large collection of books on China, its history, language, and literature, including several thousand volumes in the Chinese language. This collection was bequeathed to the Museum by the late Dr. Berthold Laufer, former Curator of Anthropology.

The Library is strictly a reference library, available for the use of scientists, students, teachers, and others engaged in research work. It is open weekdays from 9 A.M. to 4:30 P.M., except Saturdays when it closes at noon.

GENERAL MUSEUM INFORMATION

Location

Field Museum is located in Grant Park near Lake Michigan, the main entrance facing Roosevelt Road at Field Drive. Regular service direct to the entrance is maintained by the Jackson Boulevard

busses (No. 26) of the Chicago Motor Coach Company, with free transfers to and from all other lines of the company. The Illinois Central main and suburban station is only two blocks from the Museum. Surface cars of the Roosevelt Road Line have their eastern terminus in Grant Park about a block from the Museum. Elevated lines and interurban lines provide transportation to within a few blocks of the Museum. There are excellent drives for automobiles, and ample free parking space.

Hours and Rules of Admission

The Museum is open to the public every day of the year (except Christmas and New Year's Day) during the following hours:

November, December, January, February	9 a.m. to 4 p.m.
March, April, September, October	9 a.m. to 5 p.m.
May, June, July, August	9 a.m. to 6 p.m.

On Thursdays, Saturdays and Sundays admission is free. On other days an admission fee of 25 cents is charged to adults. No return admission checks are issued.

Children are admitted free on all days. Students and members of the faculty of any university, college, school or institute are admitted free upon presentation of proper credentials.

Checking

Canes, umbrellas and parcels *must* be checked at the entrances. Coats may also be checked. A fee of 5 cents is charged for this service.

Telephones

Public telephones are located west of the main (north) entrance.

Wheel Chairs

Visitors desiring the use of wheel chairs may obtain them at the main (north) entrance. A fee of 25 cents per hour is charged for chairs, and attendants must be furnished by the applicants. A deposit of \$1 is required on each chair.

The Book Shop

To provide a reliable source of supply for authoritative books in the many fields of science within the scope of Field Museum, a Book Shop is maintained at the east side of the north entrance to Stanley Field Hall. Through The Book Shop there are available at one location books by reputable authors on anthropological, botanical, geological, and zoological subjects, as well as on explorations and other activities related to the work of the Museum. Included are the products both of Field Museum Press and of other publishers. All of the books kept regularly in stock have been passed upon by qualified members of the Museum's scientific staff. There is a large selection of books for children, as well as for adults. These include books which are amusing as well as educational—books for reading *to* the youngest children, books for reading *by* children of various ages, picture books, books of drawings to be colored, attractively prepared atlases, etc. On special orders the Museum Book Shop will obtain for purchasers practically any book available from any publisher or dealer in the

world. Books may be purchased by mail order, but it is necessary to require payment in advance, as the Museum does not carry accounts. In addition to books, there are on sale miniature representations of various animals in bronze and other materials, for use as souvenirs, library decorations, and toys. Some of the larger figures are designed to serve as book ends. There are also on sale illuminated globes bearing maps of the world.

Lunch Rooms

There is a Cafeteria on the ground floor where meals and refreshments may be obtained. Accommodations are provided near the Cafeteria for school children and persons who bring their lunches.

Special Privileges

Hand cameras may be used at any time, but to make photographs requiring use of tripods or flashlights the Director's permission must be obtained. Likewise, for sketching requiring use of an easel, chair, etc., the Director's permission is necessary.

The Research Collections are not open to the public but may be visited by students, specialists, and Members of the Museum upon application to the Director when requests meet with the approval of the Chief Curators.

Museum Tours and Guide Service

At 3 P.M., on Monday, Tuesday, Wednesday, Thursday and Friday of each week, guide-lecturers conduct tours through various sections of the Museum. Thursday tours are general; on other days special subjects are covered according to a schedule, copies of which may be obtained at the north entrance or by mail on request. Tours last an hour and may be taken, without charge, by any visitor.

The services of a guide-lecturer may also be engaged, without charge, by clubs, conventions, classes from public, parochial and private schools, or other parties of ten or more individuals. Written application for this service should be made to the Director of the Museum at least a week in advance of the intended visit.

Layman Lecture Tours on Sundays

Each Sunday afternoon at 2 o'clock, during the eight months' period from October 1 to May 31, special lecture tours are offered for adults. These are conducted by The Layman Lecturer, Mr. Paul G. Dallwig, a Chicago business man and Member of the Museum, whose deep interest in scientific subjects has led him to give his services for this work without cost to those participating or to the institution. He is an impressive and dramatic speaker, who conveys authentic information about the exhibits seen on these tours. His subject is changed each month, and information as to the current topic may be obtained in advance from the Museum. The wide scope of his lectures is indicated by the following typical titles: "Digging Up the Caveman's Past," "Nature's 'March of Time,'" "The Parade of the Races," and "Gems, Jewels, and 'Junk.'" It is necessary to make reservations in advance for each Sunday tour, as the number that can be accommodated is limited. Reservations may be made by personal application to attendant at the North Entrance, by mail, or by telephone (Wabash 9410).

Illustrated Lectures in the Theatre

Courses of free illustrated lectures on science and travel are given for the public on Saturday afternoons at 2:30 o'clock during March, April, October and November in the James Simpson Theatre on the ground floor of the Museum. Men prominent in the fields of exploration and research are engaged for these lectures. Both motion pictures and colored stereopticon slides are used to illustrate them.

Other lectures, by members of the Museum's scientific staff, are frequently broadcast by various radio stations. Occasionally Americanization programs are presented for the foreign-born.

Membership

Field Museum has several classes of Members. Annual Members contribute \$10 annually. Associate Members pay \$100 and are exempt from dues. Sustaining Members contribute \$25 annually for six consecutive years, after which they become Associate Members and are exempt from all further dues. Life Members give \$500 and are exempt from dues. Non-Resident Life Members pay \$100, and Non-Resident Associate Members \$50; both of these classes are also exempt from dues. The Non-Resident memberships are available only to persons residing fifty miles or more from Chicago. Those who give or devise to the Museum \$1,000 to \$100,000 are designated as Contributors, and those who give or devise \$100,000 or more become Benefactors. Other memberships are Honorary, Patron, Corresponding and Corporate, 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. Subscription to *Field Museum News*, a monthly bulletin, 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.

Sets of Post Cards

Field Museum has published forty-nine sets of post cards illustrating subjects represented in the exhibits of the Departments of Anthropology, Botany, Geology, Zoology, and the N. W. Harris Public School Extension. These cards are printed by the photogravure process, and each one 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. For children they are especially valuable.

Following are the subjects, number of cards in each set, and price:

ANTHROPOLOGY

Numbers and subjects of sets	Cards in sets	Price
1. Archaic Bronzes, China	16	\$.30
2. Sung Bronze Vases, China	10	.20

Numbers and subjects of sets	Cards in sets	Price
3. Bronze Figures, China	15	\$.30
4. Ancient Pottery, China	14	.30
5. Mortuary Clay Figures. <i>a.</i> Human Figures, China	10	.20
6. Mortuary Clay Figures. <i>b.</i> Animal Figures, China	14	.30
7. Buddhist Sculpture, Buddhas, China	7	.15
8. Buddhist Sculpture, Bodhisatvas, China	14	.30
9. Buddhist Sculpture, Monks, China	6	.10
10. Buddhist and Taoist Sculptures, China	10	.20
11. Imperial Costumes, China	6	.10
12. Actors' Costumes, China	8	.15
13. Lama Mystery-play, Tibet	13	.30
14. Folk Costumes, Tibet	10	.20
15. Buddhistic Sculpture, India	14	.30
16. Ancient Sculpture, Mexico	8	.15
17. Ancient Pottery, Peru	15	.30
18. Drums, Daggers, Bags, New Britain, New Guinea	11	.20
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
23. Wooden Masks, New Guinea and New Britain	10	.20
24. Prepared Human Heads, New Guinea and New Hebrides	8	.15
25. Alabaster Jars, Egypt	12	.25
26. Bronzes and Ivory Carvings, Benin, West Africa	12	.25
27. Medicine-man, Wooden Masks, etc., Cameroon	8	.15
28. Bronzes: Races of Mankind	30	.50
29. Man of the Stone Age	10	.20
30. African Races: Sculptures in Hall 3	18	.35
31. American Races: Sculptures in Hall 3	12	.25
32. Asiatic Races: Sculptures in Hall 3	30	.50
33. European Races: Sculptures in Hall 3	10	.20
34. Oceanic and Australian Races: Sculptures in Hall 3	16	.30
35. Bronzes: Races of Mankind (complete set)	80	1.50
BOTANY		
1. Miscellaneous Plants	12	.25
GEOLOGY		
1. Restorations of Ancient Landscapes, Plants and Animals	14	.30
2. Neanderthal (Mousterian) Man	10	.20
3. The Meshippus, a Three-toed Horse	6	.10
ZOOLOGY		
1. Apes and Monkeys	8	.15
2. Interesting Large Rodents	7	.15

Numbers and subjects of sets	Cards in sets	Price
3. Marsupials, or Pouched Mammals	8	\$.15
4. Tarantulas, Centipedes and Scorpions	10	.20
5. Skates and Rays of American Waters	10	.20
6. Common American Moths	10	.20
7. Common Illinois Butterflies	20	.40
8. North American Mammals: Habitat Groups	18	.35
9. African Game Animals	19	.35
10. British Champion Animals: Sculptures in Hall 12	20	.40

N. W. HARRIS PUBLIC SCHOOL EXTENSION

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| 1. Types of cases loaned to Chicago schools | 7 | .15 |
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Post card sets on other subjects will be added from time to time.

Other Post Cards and Pictures

Post cards of miscellaneous subjects selected from among the Museum exhibits are on sale at the north or main entrance at the rate of two for 5 cents.

Antiquities of Ancient Ireland—ten photogravures, 6" x 9". 5 cents.

Field Museum Album—contains ten cabinet views 5½" x 7" and ten photogravure post cards. 25 cents.

A portfolio of forty-seven photogravures of mounted animals and of sculpture representing the work of Carl E. Akeley in Field Museum. Plates are 9" x 12", and are packed in de luxe carton. \$2.

Abyssinian Birds and Mammals, from paintings by Louis Agassiz Fuertes. 32 lithographic reproductions, 10" x 12", of birds and mammals, packed in carton. \$3. In de luxe cover \$5.

Photographs of most of the outstanding exhibits are on sale. These are available at \$1 per print when sold for personal use only; when purchaser intends using them for publication or reproduction in any form the price is \$2 per print. Some are copyrighted. Permission to reproduce photographs must be obtained from the Director of the Museum, and is granted only on condition that courtesy lines giving credit to Field Museum of Natural History shall appear with the reproductions, and upon compliance with other requirements the Museum may make.

All of the post cards, pictures, albums, etc., may be obtained at the information desk at the main or north entrance of the Museum.

List and Prices of Illustrated Leaflets Issued by Field Museum

ANTHROPOLOGY

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| 1—Chinese Gateway. By Berthold Laufer. 8 pages, 1 photogravure. February, 1922. (<i>Supply exhausted.</i>) | \$ — |
| 2—Philippine Forge Group. By F. C. Cole. 4 pages, 1 photogravure. February, 1922. | .10 |
| 3—Japanese Collections. By Helen C. Gunsaulus. 20 pages, 6 photogravures. April, 1922. | .20 |

4—New Guinea Masks. By A. B. Lewis. 12 pages, 6 photogravures. June, 1922.	\$.15
5—The Thunder Ceremony of the Pawnee. By Ralph Linton. 20 pages, 4 photogravures. October, 1922.	.20
6—The Sacrifice to the Morning Star. By Ralph Linton. 20 pages, 1 photogravure. November, 1922.	.10
7—Purification of the Sacred Bundles. By Ralph Linton. 11 pages, 1 photogravure. April, 1923.	.10
8—Annual Ceremony of the Pawnee Medicine Men. By Ralph Linton. 20 pages, 2 photogravures. April, 1923.	.10
9—The Use of Sago in New Guinea. By A. B. Lewis. 9 pages, 4 photogravures, 3 text-figures. July, 1923.	.10
10—Use of Human Skulls and Bones in Tibet. By Berthold Laufer. 16 pages, 1 halftone. July, 1923.	.10
11—The Japanese New Year's Festival, Games and Pastimes. By Helen C. Gunsaulus. 18 pages, 8 halftones. July, 1923.	.15
12—Japanese Costume. By Helen C. Gunsaulus. 26 pages, 4 photogravures. December, 1923.	.20
13—Gods and Heroes of Japan. By Helen C. Gunsaulus. 24 pages, 4 photogravures. May, 1924.	.15
14—Japanese Temples and Houses. By Helen C. Gunsaulus. 20 pages, 4 photogravures. May, 1924.	.15
15—Use of Tobacco among North American Indians. By Ralph Linton. 27 pages, 6 photogravures. December, 1924.	.20
16—Use of Tobacco in Mexico and South America. By J. Alden Mason. 15 pages, 6 photogravures. January, 1925.	.15
17—Use of Tobacco in New Guinea and Neighboring Regions. By Albert B. Lewis. 10 pages, 2 photogravures. January, 1925.	.10
18—Tobacco and Its Use in Asia. By Berthold Laufer. 39 pages, 10 photogravures. January, 1925.	.25
19—Introduction of Tobacco into Europe. By Berthold Laufer. 66 pages. January, 1925.	.25
20—The Japanese Sword and Its Decoration. By Helen C. Gunsaulus. 21 pages, 4 photogravures. January, 1925.	.15
21—Ivory in China. By Berthold Laufer. 78 pages, 10 photogravures, 13 text-figures. August, 1925.	.60
22—Insect Musicians and Cricket Champions of China. By Berthold Laufer. 28 pages, 12 photogravures, 1 cover design. July, 1927.	.40
23—Ostrich Egg-shell Cups of Mesopotamia and the Ostrich in Ancient and Modern Times. By Berthold Laufer. 52 pages, 9 photogravures, 10 text-figures, 1 cover design. April, 1926.	.30
24—Indian Tribes of the Chicago Region. With special reference to the Illinois and the Potawatomi. By William D. Strong. 36 pages, 8 photogravures. December, 1926.	.25

- 25—The Civilization of the Mayas (Third Edition). By J. Eric Thompson. 104 pages, 14 photogravures, 11 text-figures, 1 map, 1 cover design. June, 1936. \$.60
- 26—The Early History of Man. By Henry Field. 18 pages, 8 photogravures, 1 map, 1 cover design. June, 1927. (*Supply exhausted.*) —
- 27—The Giraffe in History and Art. By Berthold Laufer. 100 pages, 9 photogravures, 1 vignette, 23 text-figures, 1 cover design. March, 1928. .60
- 28—The Field Museum-Oxford University Expedition to Kish, Mesopotamia, 1923-1929. By Henry Field. 34 pages, 14 photogravures, 2 maps. December, 1929. .50
- 29—Tobacco and Its Use in Africa. By Berthold Laufer, Wilfrid D. Hambly, and Ralph Linton. 45 pages, 6 photogravures. January, 1930. .25
- 30—The Races of Mankind. By Henry Field, with a preface by Berthold Laufer and an introduction by Sir Arthur Keith. 40 pages, 9 photogravures, 1 plan of hall. May, 1933. .25
- 31—Prehistoric Man. Hall of the Stone Age of the Old World. By Henry Field, with a foreword by Berthold Laufer. 44 pages, 8 photogravures, 1 map, 1 cover plate. July, 1933. .25
- 32—Primitive Hunters of Australia. By Wilfrid D. Hambly. 60 pages, 12 photogravures, 1 map. February, 1936. .30
- 33—Archaeology of South America. By J. Eric Thompson. 160 pages, 12 photogravures, 18 text figures. July, 1936. .75

DESIGN SERIES

- 1—Block Prints from India for Textiles. By A. B. Lewis. 24 plates, 2 of which are in colors, 2 text-figures. February, 1924. .50
- 2—Javanese Batik Designs from Metal Stamps. By A. B. Lewis. 24 plates, 2 of which are in colors, 2 text-figures. September, 1924. .50
- 3—Chinese Baskets. By Berthold Laufer. 38 photogravures and preface of 2 pages, in carton. December, 1925. 1.25
- 4—Decorative Art of New Guinea. By A. B. Lewis. 1 photogravure, preface of 2 pages, 52 halftones. April, 1926. .75
- 5—Carved and Painted Designs from New Guinea. By A. B. Lewis. 1 photogravure, preface of 3 pages, 52 halftones. January, 1931. 1.25

BOTANY

- 1—Figs. By B. E. Dahlgren. 8 pages, 1 photogravure. February, 1922. .10
- 2—Coco Palm. By B. E. Dahlgren. 8 pages, 2 photogravures. February, 1922. .10
- 3—Wheat. By B. E. Dahlgren. 8 pages, 1 photogravure. February, 1922. .10

4—Cacao. By B. E. Dahlgren. 14 pages, 2 photogravures, 3 text-figures. November, 1922.	\$.10
5—A Fossil Flower. By B. E. Dahlgren. 16 pages, 6 halftones, 4 zinc etchings. April, 1924.	.10
6—The Cannon-ball Tree. By B. E. Dahlgren. 8 pages, 6 photogravures. February, 1925.	.10
7—Spring Wild Flowers. By J. Francis Macbride. 32 pages, 2 photogravures, 28 halftones. May, 1924.	.25
8—Spring and Early Summer Wild Flowers. By J. Francis Macbride. 30 pages, 2 photogravures, 28 halftones. June, 1924.	.25
9—Summer Wild Flowers. By J. Francis Macbride. 30 pages, 1 color plate, 2 photogravures, 28 halftones. June, 1924.	.25
10—Autumn Flowers and Fruits. By J. Francis Macbride. 30 pages, 1 color plate, 2 photogravures, 28 halftones. October, 1924.	.25
11—Common Trees (Second Edition). By J. Francis Macbride. 44 pages, 2 photogravures, 43 halftones. February, 1936.	.25
12—Poison Ivy. By James B. McNair. 12 pages, 6 halftones, 1 cover design. April, 1926.	.15
13—Sugar and Sugar-making. By James B. McNair. 34 pages, 8 halftones, 1 cover design. October, 1927.	.25
14—Indian Corn. By James B. McNair. 34 pages, 6 halftones, 1 cover design. February, 1930.	.25
15—Spices and Condiments. By James B. McNair. 64 pages, 11 zinc etchings. August, 1930.	.25
16—Fifty Common Plant Galls of the Chicago Area. By Carl F. Gronemann. 30 pages, 1 colored plate, 51 zinc etchings. September, 1930.	.25
17—Common Weeds. By Paul C. Standley. 32 pages, 27 photogravures. September, 1934.	.25
18—Common Mushrooms. By Leon L. Pray. 68 pages, 66 text figures, 1 cover design. July, 1936.	.50
19—Old-Fashioned Garden Flowers. By Donald Culross Peattie. 32 pages, 28 text figures, 1 cover design. November, 1936.	.25
20—House Plants. By Robert Van Tress. 36 pages, 31 text figures, 1 cover design. April, 1937.	.35
21—Tea. By Llewelyn Williams. 30 pages, 9 photogravures, 1 cover design. July, 1937.	.25
22—Coffee. By B. E. Dahlgren. 44 pages, 14 collotypes, 1 zinc etching, 1 cover design. May 25, 1938.	.25

GEOLOGY

1—Arizona Gold Mine. By H. W. Nichols. 12 pages, 1 photogravure. May, 1922.	.10
2—Models of Blast Furnaces for Smelting Iron. By H. W. Nichols. 12 pages, 3 photogravures. November, 1922.	.10

3—Amber. By O. C. Farrington. 7 pages, 3 colored photogravures, 1 photogravure (monotone). July, 1920.	\$.10
4—Meteorites. By O. C. Farrington. 11 pages, 4 photogravures. September, 1923.	.10
5—Soils. By H. W. Nichols. 13 pages, 6 photogravures. April, 1925.	.10
6—The Moon. By O. C. Farrington. 13 pages, 2 photogravures. October, 1925.	.10
7—Early Geological History of Chicago. By H. W. Nichols. 30 pages, 4 photogravures, 6 maps in colors, 9 text figures. September, 1925.	.25
8—Agate—Physical Properties and Origin. By O. C. Farrington. Archaeology and Folk-lore. By Berthold Laufer. 36 pages, 10 photogravures, 4 colored plates, 1 colored text figure. July, 1927.	.50
9—How Old Are Fossils? By Sharat K. Roy. 12 pages, 4 photogravures. June, 1927.	.15
10—Famous Diamonds. By O. C. Farrington. 28 pages, 4 photogravures, 1 colored plate. February, 1929.	.25
11—Neanderthal (Mousterian) Man. By O. C. Farrington and Henry Field. 16 pages, 8 photogravures, 1 map. October, 1929.	.15
12—Cement. By H. W. Nichols. 16 pages, 4 photogravures. October, 1929.	.15
13—The Geological History and Evolution of the Horse. By Elmer S. Riggs. 54 pages, 19 photogravures, 4 text figures, 1 cover illustration. November, 1932.	.40
14—A Forest of the Coal Age. By B. E. Dahlgren. 40 pages, 2 photogravures, 20 halftones, 4 zinc etchings, 1 cover design. October, 1933.	.25

ZOOLOGY

1—White-tailed Deer. By Wilfred H. Osgood. 12 pages, 1 photogravure. April, 1922.	.10
2—Chicago Winter Birds. By Colin C. Sanborn. 12 pages, 1 photogravure. November, 1922.	.10
3—The American Alligator. By Karl P. Schmidt. 16 pages, 2 photogravures. January, 1923.	.10
4—The Periodical Cicada. By William J. Gerhard. 14 pages, 4 photogravures. March, 1923.	.10
5—The Alligator Gar. By Alfred C. Weed. 16 pages, 3 photogravures. April, 1923.	.10
6—The Wild Turkey. By John T. Zimmer. 15 pages, 1 photogravure. March, 1924.	.10
7—The Man-Eating Lions of Tsavo. By Lieutenant-Colonel J. H. Patterson, D.S.O. 40 pages, 6 halftones, 1 map. October, 1925.	.50
8—Mammals of the Chicago Area. By Colin C. Sanborn. 24 pages, 3 halftones, 19 zinc etchings. January, 1926.	.20

9—Pike, Pickerel and Muskalonge. By Alfred C. Weed. 52 pages, 8 colored plates, 4 text-figures, 1 cover design. June, 1927.	\$.50
10—The Truth about Snake Stories. By Karl P. Schmidt. 20 pages (no illustrations). January, 1929.	.15
11—The Frogs and Toads of the Chicago Area. By Karl P. Schmidt. 16 pages, 4 photogravures, 1 colored plate. February, 1929.	.25
12—The Salamanders of the Chicago Area. By Karl P. Schmidt. 16 pages, 2 photogravures, 1 colored plate, 1 zinc etching, 1 cover design. October, 1930.	.25
13—Sculptures by Herbert Haseltine of Champion Domestic Animals of Great Britain. 6 pages of text, 19 photo- gravures (with captions opposite). June, 1934.	.25
14—Turtles of the Chicago Area. By Karl P. Schmidt. 24 pages, 2 colored plates, 10 text figures.	.25

SPECIAL LEAFLET

1—Lion Spearing. By Carl E. Akeley. 7 pages, 3 photo- gravures. September, 1926.	.15
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GUIDES

Anthropology Guide, Part I. Oriental Theatricals. By Berthold Laufer. 60 pages, 11 photogravures.	.25
Anthropology Guide, Part II. Archaeology of North America. By Paul S. Martin. 122 pages, 8 photogravures, 10 text figures.	.50
Anthropology Guide, Part III. Ethnology of Africa. By Wilfrid D. Hambly. 226 pages, 42 photogravures.	1.50
Anthropology Guide, Part V. Ethnology of Melanesia. By Albert B. Lewis. 210 pages, 64 photogravures.	1.75
Anthropology Guide, Part VI. Ethnology of Polynesia and Micronesia. By Ralph Linton. 192 pages, 73 illustrations.	.35
Botany Guide. North American Trees. By Samuel J. Record. 120 pages, 84 zinc etchings.	.50

HANDBOOKS

Handbook. General information concerning the Museum, its history, building, exhibits, expeditions, and activi- ties. Seventh edition. January, 1938. 73 pages, 9 halftones.	.25
Flora of the Indiana Dunes. By Donald C. Peattie. May, 1930. 432 pages, 38 halftones.	2.00

